rather than harming the PHA's residents, had resulted in excess utility allowance rent reductions and payments for the residents. (App. 14a ¶¶ 5-7). The district court consequently held that the residents had suffered no actual injury despite the fact that PHA had not revised its gas utility allowances. (App. 14a ¶ 6). It therefore denied the plaintiff class's request for retroactive monetary relief. (App. 14a ¶ 6).

The United States Court of Appeals for the Third Circuit, however, on September 13, 2005 reversed the district court's denial of civil contempt sanctions. *McDowell v. Philadelphia Housing Authority*, 423 F.3d 233 (3d Cir. 2005). (App. 1a-12a). The Third Circuit held that PHA's residents "were entitled . . . to have their allowances recalculated based on the increased rates and the consumption factor in effect at the time." (App. 11a). The Third Circuit ruled that PHA's overstatement of the consumption factor could not be considered and ordered the district court to calculate and grant residents a compensatory civil sanction against PHA in the amount of the difference between the allowances received by tenants and increased utility allowances based solely on the gas rate increases and the unrevised utility consumption factor that PHA had used in 2000-02. (App. 11a-12a).

REASONS FOR GRANTING THE PETITION

The Third Circuit's opinion conflicts with the decisions of this Court and other Courts of Appeals both on the limits and extent of the courts' civil contempt powers and on the measure of harm from violation of procedural rights. In addition, the impact of the Third Circuit's decision extends far beyond this Consent Decree and these parties, as the opinion interprets and effectively rewrites HUD's public housing utility allowance regulations.

A. The Third Circuit's Opinion Conflicts with the Decisions of this Court and Other Circuits Limiting the Courts' Civil Contempt Powers

This Court has made clear that civil contempt sanctions for past conduct can be permitted only where the complainant was harmed by the violation of the court order and that such sanctions must be limited to compensation for the harm the violation caused. *International Union, United Mine Workers of America v. Bagwell*, 512 U.S. 821, 827-34 (1994); *United States v. United Mine Workers of America*, 330 U.S. 258, 303-04 (1947).

The Third Circuit's requirement that the district court award compensatory retroactive civil contempt sanctions to the plaintiff class based solely on increased gas rates directly disregards and conflicts with these limitations on the contempt power. The Consent Decree and HUD's regulations required that PHA "*revise*" its utility allowances, not that PHA *increase* the allowances. (App. 4a; App. 22a, 24 C.F.R. § 965.507(b)). In contrast, the Consent Decree used the term "increase" when PHA was required to automatically raise utility allowances based on rate increases without regard to other factors. (App. 25a). The Consent Decree's requirement that PHA "revise" the allowances therefore could not properly be read to require an increase based solely on rate changes and the utility rate component. Instead, it required a revision of the allowances consistent with HUD regulations, which not only would address the rate increase but could also include consideration of other factors bearing on the appropriate utility allowance. The consumption component is such a factor that HUD regulations require that housing authorities consider in setting and revising utility allowances. 24 C.F.R. §965.505, § 965.507(a).

The Third Circuit's reasons for excluding the consumption component were invalid. While paragraph 8 of the Consent Decree does not list utility consumption as a factor in the

utility allowance revisions that it requires, it also does not exclude or prohibit consideration of the consumption component and neither lists nor limits *any* of the factors that may be included in the revision. Neither paragraph 8 of the Consent Decree nor the HUD regulation which it tracks, 24 C.F.R. § 965.507(b), states that only adjustments to the rate component may be included in a revision. The rate change is thus a trigger for the need and right to revise utility allowances, and not a specification or restriction on what may be included in a revision. Moreover, PHA was clearly and expressly entitled, under both paragraphs 6 and 7 of the Consent Decree and HUD regulation 965.507(a), to revise the consumption factor in the annual reviews that were required in this same time period. (App. 3a; App. 21a-22a, 24 C.F.R. § 965.507(a)). Compliance with the Consent Decree therefore would have permitted revisions in the consumption factor even under the Third Circuit's cramped reading of paragraph 8 and Section 965.507(b).

HUD's 60-day notice requirement, 24 C.F.R. § 965.502(c), likewise does not preclude a housing agency from including valid, supported changes in the consumption component in the required revisions to utility allowances. Section 965.502(c)'s notice requirement does not apply, as the HUD regulation concerning revisions triggered by rate increases specifically exempts such revisions from the notice requirement. 24 C.F.R. § 965.507(b) (App. 22a).

Because the only violation of the Consent Decree was failure to revise the gas utility allowances and PHA was not required to automatically or proportionately increase the allowance if no increase was warranted under all appropriate factors, the Third Circuit's ruling conflicts with this Court's limitations on civil contempt sanctions. Had PHA undertaken to revise the gas utility allowances at the time of the PGW rate increases, it would have been entitled to consider the consumption data available and in existence in the 2000-02

period and which demonstrated that the consumption component was grossly excessive. Had PHA revised its gas utility allowances in 2000-02, it would not have been required to raise the allowances and in fact could have lowered them, given that the overstatement of the consumption component far exceeded the increases in gas rates. The residents therefore suffered no actual loss from PHA's failure to conduct revisions of the allowances and were in fact benefited by the failure to revise. The civil contempt sanctions ordered by the Third Circuit are thus inconsistent and incompatible with the requirement that civil contempt sanctions for past conduct be limited to plaintiffs' actual loss.

The Third Circuit's ruling that residents were entitled to compensatory civil contempt sanctions based on benefits that they would not have received under full compliance with the Consent Decree also conflicts with the decisions of other circuits. The Court of Appeals for the Tenth Circuit has held that a defendant must be allowed to offset, against the plaintiffs' claimed losses, benefits that plaintiffs received from the conduct that violated an injunction. *Federal Trade Commission v. Kuykendall*, 371 F.3d 745, 766-67 (10th Cir. 2004) (civil contempt defendants must be allowed to offset, against total sales from improper telemarketing, amounts paid by customers where customer was satisfied with the purchase and would not rescind despite improper solicitations). The Third Circuit, in contrast, refused to allow PHA to offset against the gas rate increase the benefit, an unreasonably high consumption factor, that plaintiffs received from PHA's failure to revise the allowances. (App. 7a-12a).

The Court of Appeals for the Eighth Circuit has reversed civil contempt sanctions because defendants' violation of an injunction did not cause the harm suffered by plaintiffs, where compliance with the injunction's procedural requirements would not have changed the loss incurred by plaintiffs. *McBride v. Coleman*, 955 F.2d 571, 577-78 (8th Cir. 1992)

(civil contempt damages cannot be awarded for government's failure to comply with notice obligations of court's injunction where same harm would have occurred even if defendants had given the notice required by the injunction). The Third Circuit here, in contrast, required civil contempt sanctions even though compliance would not have resulted in any benefit to plaintiffs.

B. The Third Circuit's Decision Affects the Interpretation of HUD's Utility Allowance Regulations and Conflicts with the Fourth Circuit's Interpretation of those HUD Regulations

The Third Circuit's opinion is not limited to construction and enforcement of a consent decree between these parties. Not only is the Consent Decree language based on and similar to HUD's utility allowance regulations, but the Third Circuit in its opinion specifically considered, relied on and interpreted those HUD regulations. (App. 8a-10a). The impact of the decision therefore extends far beyond the parties and affects the application and enforcement of HUD's public housing utility allowance regulations throughout the country.

Under the Third Circuit's ruling, HUD's utility allowance revision regulation, 24 C.F.R. § 965.507(b), has been rewritten to prohibit housing authorities from considering factors other than utility rates in revising their utility allowances. (App. 8a-10a). The Third Circuit held that Section 965.507(b) refers to "adjustments based on rate changes of 10% or more but does not mention adjustments based on consumption changes" and therefore does not permit reasonable consumption to be considered in utility allowance revisions triggered by rate increases. (App. 8a). Effectively, the Third Circuit's opinion requires housing authorities to base utility allowances on invalid, inaccurate and excessive consumption estimates and to automatically increase utility allowances based solely on rate increases, even if the resulting allowance would violate HUD's standards for reasonable utility allowances,

24 C.F.R. § 965.505. This directly conflicts with the core and central purpose of the HUD regulations, which provide that "[t]he objective of a PHA [public housing agency] in . . . establishing utility allowances . . . shall be to approximate a *reasonable consumption* of utilities by an energy-conservative household of modest circumstances." 24 C.F.R. § 965.505(a) (emphasis added) (App. 19a).

The Third Circuit's opinion, moreover, conflicts with the Fourth Circuit's interpretation of the HUD utility allowance regulations. In *Dorsey v. Housing Authority of Baltimore City*, 984 F.2d 622 (4th Cir. 1993), the Fourth Circuit interpreted HUD's utility allowance regulations and held that noncompliance with procedural mandates to revise utility allowances does not automatically invalidate existing utility allowances or necessarily require raising of the utility allowances. 984 F.2d at 632. Although it was undisputed in *Dorsey* that the defendant housing authority had not revised its utility allowances as required by HUD's regulations, the Fourth Circuit held that this could not support liability unless it was shown that the resulting utility allowances did not satisfy HUD's requirements for reasonable utility allowances. 984 F.2d at 632 ("the regulations as a whole define the contours of reasonability preclud[ing] us from piecemeal evaluation of procedural regulations separate from the evaluation of the reasonableness of the allowances"). The Third Circuit in this case has taken a position diametrically opposite to the Fourth Circuit, holding that failure to revise utility allowances requires an automatic raising of allowances regardless of HUD's standards of reasonableness.

C. The Third Circuit's Opinion Conflicts with the Decisions of this Court and Other Circuits on the Measure of Harm from Violation of Procedural Rights

The noncompliance with the Consent Decree in this case involved a procedural requirement, a requirement that a revi-

sion process be conducted when certain utility rate increases occur. The Consent Decree did not require that utility allowances be increased proportionately to or based solely on utility rate increases. Rather, both it and the regulations that it enforced and tracked required only that a revision be done to make sure that the allowances remained in compliance with HUD's substantive requirements. (App. 3a-4a; App. 21a-22a, 24 C.F.R. § 965.507).

This Court has made clear that where violation of procedural rights or procedural requirements is at issue, there is no harm to plaintiff that can support a compensatory award if the same outcome would have occurred even if the required procedures had been fully provided and followed. *Memphis Community School District v. Stachura*, 477 U.S. 299, 307-11 (1986); *Carey v. Piphus*, 435 U.S. 247, 260-66 (1978).

The Third Circuit's judgment is directly contrary to these decisions. The Third Circuit required the district court to make a compensatory award based solely on utility rate increases, notwithstanding the district court's determination that the procedure to which plaintiff residents were entitled, revision of utility allowances, would not have given the residents that different and more favorable outcome.

In this regard, the Third Circuit's decision also conflicts with decisions of other circuits. Other circuits have applied this Court's *Carey v. Piphus* standard to hold that no compensatory award for violation of procedural rights can be made for economic harm from a government decision or act if adherence to the procedural protections would not have resulted in a different outcome. *See, e.g., Kassim v. City of Schenectady*, 415 F.3d 246, 250 (2d Cir. 2005); *Brewer v. Chauvin*, 938 F.2d 860, 864-65 (8th Cir. 1991).

CONCLUSION

The petition for writ of certiorari should be granted.

Respectfully submitted,

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January 5, 2006

APPENDICES

APPENDIX A

UNITED STATES COURT OF APPEALS
THIRD CIRCUIT

No. 04-2609

JACKIE MCDOWELL, *et al.*

v.

PHILADELPHIA HOUSING AUTHORITY (PHA);
JOHN WHITE; BARRY MILLER

Jackie McDowell and the certified
class whom she represents,
Appellant

Argued May 27, 2005
Sept. 13, 2005

Rehearing and Rehearing En Banc
Denied Oct. 17, 2005 *

Before SCIRICA, *Chief Judge*, ALITO and GARTH, *Circuit Judges*.

ALITO, *Circuit Judge*.

This case requires us to construe a consent decree. The appellants, a class of tenants living in Philadelphia public housing, moved the District Court to enforce the decree and to cite the Philadelphia Housing Authority and two of its employees (together, the "PHA") for civil contempt. The tenants alleged that the PHA had violated the decree by failing to factor rising gas rates into allowances they were

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* As to panel rehearing only.

entitled to receive for their gas bills. The District Court denied the motion initially and on reconsideration, concluding that the tenants could not show any actual provable injury as a result of the PHA's violations. It reasoned that the PHA could offset its arrears by retroactively reducing the tenants' allowances in light of evidence that tenant gas consumption during the period of the violations had been overstated.

We disagree with this reasoning. The plain text of the decree and applicable federal regulations do not permit the PHA to revise the tenants' allowances retroactively to correct for historically overstated consumption. The tenants were entitled to recover in the form of sanctions the difference between the allowances they received and the allowances they should have received based on the consumption factor then in effect. The District Court erred in calculating their loss based on the PHA's revised figures, and its order denying their motion is vacated.

I.

This case has its genesis in an April 1997 lawsuit filed against the PHA by Jackie McDowell, a tenant in Philadelphia's public housing system. The suit was brought in federal court pursuant to 42 U.S.C. § 1983. McDowell's complaint alleged that the PHA had deprived her of her federal rights by failing to factor rising gas rates into the gas allowances she was entitled to receive under the United States Housing Act of 1937, 42 U.S.C. § 1437 *et seq.* McDowell sought relief for herself and for similarly situated tenants who were allegedly owed allowances by the PHA. The plaintiff class was certified in May 1997.

To understand the plaintiffs' claims, some exposition of the Housing Act and its accompanying regulations is necessary. Under section 3(a)(1)(A) of the Act, as amended, a public housing authority ordinarily may not require a tenant family to pay more than 30% of its monthly adjusted income as rent. 42 U.S.C. § 1437a(a)(1)(A). Since the Department of Hous-

ing and Urban Development ("HUD") has interpreted "rent" to include the reasonable cost of utilities, *see, e.g.*, Tenant Allowances for Utilities, 49 Fed. Reg. 31,399, 31,400 (Aug. 7, 1984); *Wright v. Roanoke Redevelopment & Hous. Auth.*, 479 U.S. 418, 420, 107 S.Ct. 766, 93 L.Ed.2d 781 (1987), housing authorities must issue rebates to tenants who purchase service directly from a utility company. *See West v. Sullivan*, 973 F.2d 179, 182 (3d Cir.1992); *West v. Bowen*, 879 F.2d 1122, 1129 (3d Cir.1989).

These rebates take the form of monthly allowances credited toward the tenant's rent. *See* 24 C.F.R. § 965.504(b). The amount of the allowance is calculated "to approximate a reasonable consumption of utilities by an energy-conservative household of modest circumstances consistent with the requirements of a safe, sanitary, and healthful living environment." *Id.* § 965.505(a). Separate allowances are calculated for each utility based on the utility company's rates and a consumption factor that takes account of the climate in which the housing is located, the size of the dwelling units, and other relevant circumstances. *Id.* §§ 965.505(d), 965.507(a). If a tenant's utility bill exceeds the allowance, the tenant must make up the difference; if the allowance exceeds the bill, the difference may be pocketed. *See West v. Bowen*, 879 F.2d at 1129 & n. 8.

In January 1998, the parties agreed to settle McDowell's lawsuit. The stipulation of settlement read in pertinent part:

> 6. PHA shall, commencing with 1997, review, at least annually, the basis on which utility allowances have been established and, if reasonably required, shall establish revised allowances.
>
> 7. The annual review shall include all changes in circumstances indicating probability of a significant change in reasonable consumption requirements and changes in utility rates.

> 8. PHA may revise its allowances for resident-purchased utilities between annual reviews if there is a rate change except that PHA shall revise its allowances for resident-purchased utilities between annual [reviews] if any change in utility rates, by itself or together with prior rate changes not adjusted for, results in a change of 10 percent or more from the rates on which the allowances were based.
>
> 9. Adjustments to utility allowances shall be retroactive to the first day of the month following the month in which the last rate change taken into account in such revision became effective.

App. at 25. The terms of the settlement were incorporated into a consent decree, which provided that the District Court would retain continuing jurisdiction over the administration and enforcement of the parties' agreement. *Id.* at 29.

On December 1, 2000, after three years of stability in gas prices, the Philadelphia Gas Works ("PGW") raised the tenants' rates by approximately 11%. A month later, it raised them again. The PHA's own data show that the tenants' rates exceeded the baseline rate at the time the decree was entered by at least 10% during all but two months of the 25–month period from December 2000 through December 2002. Despite receiving several letters from the tenants' counsel urging it to revise the gas allowances, the PHA took no action on the rate hikes. The PHA frankly admits that it "fell out of compliance" with the decree during this period. PHA's Br. at 5.

On October 30, 2002, the tenants filed a motion to enforce the consent decree and to cite the PHA for civil contempt. Under a settlement reached in December 2002, the PHA agreed to increase the tenants' gas allowances effective January 1, 2003. The adjustment was not retroactive, however, and the parties' agreement expressly left unresolved whether the tenants were entitled to sanctions for the period

of noncompliance from November 2000 through December 2002. The District Court fixed a briefing schedule to resolve this issue and heard oral argument on it in July 2003.

The Court denied the tenants' motion in an unpublished order dated March 9, 2004. It found that the tenants had "not suffered any actual provable injury as a result of any failure of PHA to comply with the Consent Decree prior to January 1, 2003." App. at 536. This finding was based on "[r]evised gas consumption calculations for the period July 1, 1999, through December 31, 2002," which showed that the overstatement of gas consumption during this period equaled or exceeded the shortfalls in the allowances due to the higher rates. *Id.* The revised calculations were provided by Sud Associates, P.A. ("Sud"), a consulting firm retained by the PHA.

The tenants moved for reconsideration under Federal Rule of Civil Procedure 59(e). In addition to challenging the District Court's construction of the consent decree, they argued that the Court should have afforded them discovery of Sud's data and an evidentiary hearing to contest its findings. The Court denied the motion on May 6, 2004, and the tenants timely appealed on June 4 of that year, raising the same claims rejected on their motion for reconsideration.

II.

The denial of a motion for reconsideration is reviewed for abuse of discretion. *See N. River Ins. Co. v. CIGNA Reinsurance Co.*, 52 F.3d 1194, 1203 (3d Cir.1995). This standard of review also applies to the underlying decision to deny the motion to enforce the consent decree. *See Holland v. N.J. Dep't of Corrs.*, 246 F.3d 267, 281 (3d Cir.2001); *Harris v. City of Philadelphia*, 47 F.3d 1342, 1349 (3d Cir.1995). An abuse of discretion may occur as a result of an errant conclusion of law, an improper application of law to fact, or a clearly erroneous finding of fact. *Chiang v. Veneman*, 385 F.3d 256, 264 (3d Cir.2004).

The proper construction of the consent decree is a question of law that receives plenary review. *See Holland*, 246 F.3d at 270; *Sansom Comm. ex rel. Cook v. Lynn*, 735 F.2d 1535, 1539 (3d Cir.1984). The decision to deny the tenants discovery and an evidentiary hearing is reviewed for abuse of discretion. *See United States v. Hedaithy*, 392 F.3d 580, 605 (3d Cir.2004); *United States v. Albinson*, 356 F.3d 278, 281 & n. 5 (3d Cir.2004). Under these standards, vacatur may be required if the District Court denied the tenants' motions based on a misconstruction of the decree or if it abused its discretion in denying them discovery and an evidentiary hearing. We discuss these claims in turn.

III.

Since a consent decree issued upon the stipulation of the parties has the characteristics of a contract, contract principles govern its construction. *See Frew ex rel. Frew v. Hawkins*, 540 U.S. 431, 437, 124 S.Ct. 899, 157 L.Ed.2d 855 (2004); *United States v. New Jersey*, 194 F.3d 426, 430 (3d Cir.1999). One of these principles is that an unambiguous agreement should be enforced according to its terms. *See United States v. New Jersey*, 194 F.3d at 430 (citing *Fox v. U.S. Dep't of Hous. & Urban Dev.*, 680 F.2d 315, 319-20 (3d Cir. 1982)). Whether the decree is unambiguous is a question of law that the Court decides by considering whether, "from an objective standpoint, [the decree] is reasonably susceptible to at least two different interpretations." *Id.* (citing *Hullett v. Towers, Perrin, Forster & Crosby, Inc.*, 38 F.3d 107, 111 (3d Cir.1994)).

If the decree is ambiguous, the Court may look to extrinsic evidence of its meaning, *see Thermice Corp. v. Vistron Corp.*, 832 F.2d 248, 252 (3d Cir.1987), but ambiguities that persist must be construed against the party seeking enforcement. *See Harris*, 47 F.3d at 1350; *accord FTC v. Kuykendall*, 371 F.3d 745, 760-61 (10th Cir.2004). This rule avoids imposing obligations on the parties that they did not bargain for, and it

ensures that a party has fair notice of what the decree requires before the serious sanction of contempt is invoked. *See United States v. Armour & Co.*, 402 U.S. 673, 681-82, 91 S.Ct. 1752, 29 L.Ed.2d 256 (1971); *Harris*, 47 F.3d at 1350.

There can be no doubt that the consent decree obligated the PHA to revise its gas allowances after the rate changes at issue here. This duty emerges unambiguously from the plain text of paragraph 8 of the decree, and the PHA does not deny that this duty was breached. The interpretive question we must answer is how the consent decree permitted the PHA to remedy this breach. The PHA argues that the decree permitted it to offset the shortfall in the allowances the tenants received by revising estimates of tenant gas consumption during the period when the violations were occurring. The tenants argue that the PHA may not offset its sanctions in this manner because the decree does not permit it to adjust the tenants' allowances retroactively based on revised consumption data.

We agree with the tenants. The only paragraph of the decree that discusses consumption is paragraph 7, which permits the PHA, in the course of an annual review, to consider "all changes in circumstances indicating probability of a significant change in reasonable consumption requirements." App. at 25. The word "probability" plainly indicates that the focus of the review is to be prospective. Although paragraph 9 arguably gives limited retroactive effect to some revisions based on consumption changes, it does not follow that the revisions may be retrospective. The unambiguous language of paragraph 7 indicates that revisions must correct for "probab[le]" changes in consumption, not for past consumption levels that, in retrospect, were overstated.

Paragraph 8 discusses retrospective adjustments but does not mention consumption. It permits (and in some cases requires) an adjustment "if there is a rate change." *Id.* In light of the language of paragraph 7, which mentions both rate and

consumption changes, the omission of consumption in paragraph 8 is a significant one. A reading of the decree in its entirety, aided by a straightforward application of the *expressio unius* canon, compels the conclusion that the PHA may not revise the tenants' allowances retroactively to correct for historic overestimates of gas consumption.

This view is buttressed by HUD regulations whose language the consent decree tracks. Under 24 C.F.R. § 965.502(c), the PHA must give at least 60 days' notice to all tenants before the "proposed effective date" of an adjustment to their allowances. Section 965.507(b) carves out an exception to the notice requirement for adjustments based on rate changes of 10% or more but does not mention adjustments based on consumption changes. *Id.* § 965.507(b). Adjustments based on consumption changes thus remain subject to § 965.502(c)'s notice requirement. Since such an adjustment may not take effect until 60 days after the tenants have received notice, retroactive adjustments are plainly forbidden under the regulations.

The District Court disregarded the regulations, believing that the tenants' motion should be decided solely on the consent decree, which contains no notice requirement. It is true that a consent decree should be "construed as it is written, and not as it might have been written had the plaintiff established his factual claims and legal theories in litigation." *Armour & Co.*, 402 U.S. at 682, 91 S.Ct. 1752. Because the decree compromises litigation, it will rarely afford the plaintiffs all the relief they would have obtained had the case proceeded to a judgment in their favor. *See id.* at 681, 91 S.Ct. 1752; *Harris*, 47 F.3d at 1350. Ordinarily, therefore, a court should confine its interpretation to the four corners of the decree and not try to divine its meaning from speculation about the purposes of the parties or the background legal regime. *See United States v. Atl. Ref. Co.*, 360 U.S. 19, 23, 79

S.Ct. 944, 3 L.Ed.2d 1054 (1959); *Hughes v. United States*, 342 U.S. 353, 357, 72 S.Ct. 306, 96 L.Ed. 394 (1952).

Notwithstanding these principles, the Supreme Court has indicated that relevant statutes and regulations may sometimes be used to shed light on the terms of a consent decree. *See United States v. ITT Cont'l Baking Co.*, 420 U.S. 223, 238, 240-41, 95 S.Ct. 926, 43 L.Ed.2d 148 (1975). The Court in *ITT Continental Baking Co.* looked to section 7 of the Clayton Act, 15 U.S.C. § 18, to help gloss the words "acquire" and "acquisition" in an antitrust consent decree. 420 U.S. at 240-41, 95 S.Ct. 926. The Court defended its reliance on this extrinsic evidence on two grounds. First, the gloss supplied by the statute simply confirmed the meaning that emerged naturally from the decree's terms. *See id.* at 235, 95 S.Ct. 926. Second, the extrinsic evidence was being used to determine not whether the decree had been violated but what the appropriate sanction for the violation was. *See id.* at 237, 95 S.Ct. 926. Since the contemnor had clearly breached some duty under the decree, there was no danger that he would be sanctioned for contempt without fair notice of his obligations. *See id.*

These rationales apply equally here. As we noted earlier, the PHA concedes that it was in violation of the Court's order. It disputes only the amount of the sanction. In resolving this dispute, we may construe the decree "basically as a contract," and "reliance on certain aids to construction is proper, as with any other contract." *Id.* at 238, 95 S.Ct. 926; *see also United States v. New Jersey*, 194 F.3d at 430 (permitting the use of extrinsic evidence to interpret a decree); *Thermice Corp.*, 832 F.2d at 252 (same). For the reasons set forth earlier, we believe the plain language of the decree did not permit the PHA to offset its arrears by revising estimates of tenant consumption. To the extent that any doubt remains about the meaning of the decree, the regulations clearly

resolve it in the tenants' favor. In this respect, the regulations do not guide our interpretation so much as confirm it.

The PHA submits that it was required to retroactively revise the allowances because § 1437a(a)(1) does not allow tenants to pay less than 30% of their monthly adjusted income in rent. The PHA points to dicta in *Wright v. Roanoke Redevelopment & Housing Authority*, in which the Supreme Court explained that § 1437a permits a housing authority to charge "no more and no less than 30 percent" of a tenant's income as rent. 479 U.S. 418, 430, 107 S.Ct. 766, 93 L.Ed.2d 781 (1987). According to the PHA, many tenants will end up paying less than 30 percent of their income in rent if allowances based on inflated consumption estimates are left uncorrected.

Even if the language on which the PHA relies were binding, it could not support the PHA's argument. In 1998, over a decade after *Wright* was decided, Congress rewrote § 1437a(a)(2) and added the following language:

> The monthly rental amount determined under this clause for a family shall be an amount, determined by the public housing agency, that does not exceed the greatest of the amounts (rounded to the nearest dollar) determined under subparagraphs (A), (B), and (C) of paragraph (1). *This clause may not be construed to require a public housing agency to charge a monthly rent in the maximum amount permitted under this clause.*

Quality Housing and Work Responsibility Act of 1998, Pub.L. No. 105-276, § 523, 112 Stat. 2518, 2566 (codified at 42 U.S.C. § 1437a(a)(2)(B)(i)(II)) (emphasis added). The amendment takes pains to ensure that the amounts set forth in § 1437a(a)(1) are not construed as minimum rents. Once this putative rent floor is removed, the PHA's argument has nothing left to stand on.

There is consequently no merit to the District Court's conclusion that the tenants failed to show "actual provable injury" resulting from the PHA's violations. The sanction imposed on a civil contemnor for his past conduct may not exceed the actual damages caused by his violation of the court's order. *See Gregory v. Depte*, 896 F.2d 31, 34 (3d Cir.1990) (citing *Quinter v. Volkswagen of Am.*, 676 F.2d 969 (3d Cir.1982)). It does not follow, however, that the tenants' actual consumption of gas is the baseline from which their damages should be measured. As this Court explained years ago in *National Drying Machinery Co. v. Ackoff*, the offended party's rights under the decree set the baseline for calculating his loss:

> Whether an award in civil contempt be measured in terms of a plaintiff's loss or a defendant's profit, such an award, by very definition, must be an attempt to compensate plaintiff for the amount he is out-of-pocket or for what defendant by his wrong may be said to have diverted from the plaintiff or gained at plaintiff's expense.

245 F.2d 192, 194 (3d Cir.1957); *see also Quinter*, 676 F.2d at 975 ("[I]n civil contempt proceedings enforcement of the rights and remedies of a litigant is the ultimate object."); *cf. Leman v. KrentlerArnold Hinge Last Co.*, 284 U.S. 448, 455-56, 52 S.Ct. 238, 76 L.Ed. 389 (1932) (permitting the recovery of profits from a patent infringement in violation of a court order even though the patentee could not show damages resulting from the infringement).

For the reasons set forth above, the consent decree permitted the PHA to revise estimates of tenant consumption prospectively only. When PGW raised its rates, the tenants were entitled under paragraph 8 of the decree to have their allowances recalculated based on the increased rates and the consumption factor in effect at the time. The difference between the allowances so calculated and the allowances the

tenants received is the loss the tenants suffered and the benefit the PHA reaped as a result of the latter's contempt. This is the tenants' actual provable injury.

IV.

Because we conclude that the consent decree did not permit the PHA to offset a shortfall in the tenants' allowances with revised estimates of tenant gas consumption, we need not consider the tenants' alternative argument that they were wrongfully denied discovery and an evidentiary hearing to contest the revisions. The order of the District Court denying the tenants' motion for reconsideration is accordingly vacated. On remand, the tenants' motion to cite the PHA for civil contempt shall be granted, and an appropriate sanction shall be calculated in the manner described above.

APPENDIX B

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

Civil Action No. 97-2302

JACKIE MCDOWELL, *et al.*
Plaintiffs,

v.

PHILADELPHIA HOUSING AUTHORITY, *et al.*
Defendants.

ORDER

AND NOW, this 9th of March, 2004, this matter having come before the Court on plaintiff's Motion to Enforce Consent Decree, and the Court having considered all papers filed and proceedings held in connection with the motion, and having heard arguments on the motion on July 17, 2003, the Court FINDS and it is hereby ORDERED that:

1. Defendant, The Philadelphia Housing Authority ("PHA"), has been in full compliance with the Stipulation of the parties incorporated into this Court's Order of January 12, 1997 (the "Consent Decree") since January 1, 2003.

2. The monthly customer charge of the Philadelphia Gas Works ("PGW") is not part of the gas "rate" for the purpose of calculating changes of 10 percent or more, as is necessary for compliance with paragraphs 8 and 9 of the Consent Decree.

3. PHA shall continue to adjust its gas utility allowance to account for changes in PGW's monthly customer charge. Any such adjustment shall be made beginning on the first day of the month following the effective date of the change in the customer charge.

4. Both reductions and increases in PGW's gas rates are "changes" for purposes of calculating changes of 10 percent or more, as is necessary for compliance with paragraphs 8 and 9 of the Consent Decree.

5. The present motion before the Court involves enforcement of the Consent Decree. Therefore, 24 C.F.R. § 965.502(c) does not control disposition of this matter. Pursuant to paragraph 6 of the Consent Decree, PHA was required at least annually to review the basis on which gas utility allowances had been established and, if reasonably required, to establish revised allowances. Revised gas consumption calculations for the period July 1, 1999, through December 31, 2002, have been provided to the Court and counsel for plaintiffs in the Final Report prepared by Sud Associates, Inc. (dated March 2003). Counsel for the plaintiff, although afforded an opportunity to do so, did not comment upon or challenge those calculations.

6. Plaintiff and the members of the class have not suffered any actual provable injury as a result of any failure of PHA to comply with the Consent Decree prior to January 1, 2003. Plaintiff's request for retroactive monetary relief is denied.

7. PHA shall not seek to recoup from plaintiff or the class any part of the gas utility allowance overpayments that resulted from PHA's past use of any excessive consumption calculations to determine gas utility allowances.

8. By consent of PHA, the requirements of paragraph 15 of the Consent Decree concerning provision of written summary reports of future utility allowance reviews are extended until December 31, 2005.

9. The Court retains continuing jurisdiction over compliance with the Consent Decree and this Order.

/s/ John P. Fullam
JOHN P. FULLAM
Fullam. S.J.

APPENDIX C

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

No. 04-2609

JACKIE MCDOWELL, *et al.*

v.

PHILADELPHIA HOUSING AUTHORITY (PHA);
JOHN WHITE; BARRY MILLER *

Jackie McDowell and the certified
class whom she represents,
Appellant.

SUR PETITION FOR REHEARING

Present: SCIRICA, *Chief Judge*, SLOVITER, ALITO, ROTH, McKEE, RENDELL, BARRY, AMBRO, FUENTES, SMITH, FISHER, and VAN ANTWERPEN, *Circuit Judges*, and GARTH, *Senior Circuit Judge*.

The petition for rehearing filed by appellee in the above entitled case having been submitted to the judges who participated in the decision of this court and to all the other available circuit judges of the circuit in regular active service, and no judge who concurred in the decision having asked for rehearing, and a majority of the circuit judges of the circuit in regular active service not having voted for rehearing by the court en banc, the petition for rehearing is denied.

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* As to panel rehearing only.

By the Court,

/s/ Samuel A. Alito, Jr.
Circuit Judge

DATED: October 17, 2005

SLC/cc: Paul A. Brooks, Esq.
George D. Gould, Esq.
Stephanie L. Kosta, Esq.
Abbe F. Fletman, Esq.

APPENDIX D

Subpart E—Resident Allowances For Utilities

SOURCE: 61 FR 7971, Feb. 29, 1996, unless otherwise noted.

§ 965.501 Applicability.

(a) This subpart E applies to public housing, including the Turnkey III Homeownership Opportunities program. This subpart E also applies to units assisted under sections 10(c) and 23 of the U. S. Housing Act of 1937 (42 U.S.C. 1437 *et seq.*) as in effect before amendment by the Housing and Community Development Act of 1974 (12 U.S.C. 1706e) and to which 24 CFR part 900 is not applicable. This subpart E does not apply to Indian housing projects (see 24 CFR part 950).

(b) In rental units for which utilities are furnished by the PHA but there are no checkmeters to measure the actual utilities consumption of the individual units, residents shall be subject to charges for consumption by resident-owned major appliances, or for optional functions of PHA-furnished equipment, in accordance with § 965.502(e) and 965.506(b), but no utility allowance will be established.

§ 965.502 Establishment of utility allowances by PHAs.

(a) PHAs shall establish allowances for PHA-furnished utilities for all checkmetered utilities and allowances for resident-purchased utilities for all utilities purchased directly by residents from the utilities suppliers.

(b) The PHA shall maintain a record that documents the basis on which allowances and scheduled surcharges, and revisions thereof, are established and revised. Such record shall be available for inspection by residents.

(c) The PHA shall give notice to all residents of proposed allowances, scheduled surcharges, and revisions thereof. Such

notice shall be given, in the manner provided in the lease or homebuyer agreement, not less than 60 days before the proposed effective date of the allowances or scheduled surcharges or revisions; shall describe with reasonable particularity the basis for determination of the allowances, scheduled surcharges, or revisions, including a statement of the specific items of equipment and function whose utility consumption requirements were included in determining the amounts of the allowances or scheduled surcharges; shall notify residents of the place where the PHA's record maintained in accordance with paragraph (b) of this section is available for inspection; and shall provide all residents an opportunity to submit written comments during a period expiring not less than 30 days before the proposed effective date of the allowances or scheduled surcharges or revisions. Such written comments shall be retained by the PHA and shall be available for inspection by residents.

(d) Schedules of allowances and scheduled surcharges shall not be subject to approval by HUD before becoming effective, but will be reviewed in the course of audits or reviews of PHA operations.

(e) The PHA's determinations of allowances, scheduled surcharges, and revisions thereof shall be final and valid unless found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.

§ 965.503 Categories for establishment of allowances.

Separate allowances shall be established for each utility and for each category of dwelling units determined by the PHA to be reasonably comparable as to factors affecting utility usage.

§ 965.504 Period for which allowances are established.

(a) *PHA-furnished utilities.* Allowances will normally be established on a quarterly basis; however, residents may be

surcharged on a monthly basis. The allowances established may provide for seasonal variations.

(b) *Resident-purchased utilities.* Monthly allowances shall be established. The allowances established may provide for seasonal variations.

§ 965.505 Standards for allowances for utilities.

(a) The objective of a PHA in designing methods of establishing utility allowances for each dwelling unit category and unit size shall be to approximate a reasonable consumption of utilities by an energy-conservative household of modest circumstances consistent with the requirements of a safe, sanitary, and healthful living environment.

(b) Allowances for both PHA-furnished and resident-purchased utilities shall be designed to include such reasonable consumption for major equipment or for utility functions furnished by the PHA for all residents (e.g., heating furnace, hot water heater), for essential equipment whether or not furnished by the PHA (e.g., range and refrigerator), and for minor items of equipment (such as toasters and radios) furnished by residents.

(c) The complexity and elaborateness of the methods chosen by the PHA, in its discretion, to achieve the foregoing objective will depend upon the nature of the housing stock, data available to the PHA and the extent of the administrative resources reasonably available to the PHA to be devoted to the collection of such data, the formulation of methods of calculation, and actual calculation and monitoring of the allowances.

(d) In establishing allowances, the PHA shall take into account relevant factors affecting consumption requirements, including:

(1) The equipment and functions intended to be covered by the allowance for which the utility will be used.

For instance, natural gas may be used for cooking, heating domestic water, or space heating, or any combination of the three;

(2) The climatic location of the housing projects;

(3) The size of the dwelling units and the number of occupants per dwelling unit;

(4) Type of construction and design of the housing project;

(5) The energy efficiency of PHA-supplied appliances and equipment;

(6) The utility consumption requirements of appliances and equipment whose reasonable consumption is intended to be covered by the total resident payment;

(7) The physical condition, including insulation and weatherization, of the housing project;

(8) Temperature levels intended to be maintained in the unit during the day and at night, and in cold and warm weather; and

(9) Temperature of domestic hot water.

(e) If a PHA installs air conditioning, it shall provide, to the maximum extent economically feasible, systems that give residents the option of choosing to use air conditioning in their units. The design of systems that offer each resident the option to choose air conditioning shall include retail meters or checkmeters and residents shall pay for the energy used in its operation. For systems that offer residents the option to choose air conditioning, the PHA shall not include air conditioning in the utility allowances. For systems that offer residents the option to choose air conditioning but cannot be checkmetered, residents are to be surcharged in accordance with § 965.506. If an air conditioning system does not provide for resident option, residents are not to be charged, and these systems should be avoided whenever possible.

§ 965.506 Surcharges for excess consumption of PHA-furnished utilities.

(a) For dwelling units subject to allowances for PHA-furnished utilities where checkmeters have been installed, the PHA shall establish surcharges for utility consumption in excess of the allowances. Surcharges may be computed on a straight per unit of purchase basis (e.g., cents per kilowatt hour of electricity) or for stated blocks of excess consumption, and shall be based on the PHA's average utility rate. The basis for calculating such surcharges shall be described in the PHA's schedule of allowances. Changes in the dollar amounts of surcharges based directly on changes in the PHA's average utility rate shall not be subject to the advance notice requirements of this section.

(b) For dwelling units served by PHA-furnished utilities where checkmeters have not been installed, the PHA shall establish schedules of surcharges indicating additional dollar amounts residents will be required to pay by reason of estimated utility consumption attributable to resident-owned major appliances or to optional functions of PHA-furnished equipment. Such surcharge schedules shall state the resident-owned equipment (or functions of PHA-furnished equipment) for which surcharges shall be made and the amounts of such charges, which shall be based on the cost to the PHA of the utility consumption estimated to be attributable to reasonable usage of such equipment.

§ 965.507 Review and revision of allowances.

(a) *Annual review.* The PHA shall review at least annually the basis on which utility allowances have been established and, if reasonably required in order to continue adherence to the standards stated in § 965.505, shall establish revised allowances. The review shall include all changes in circumstances (including completion of modernization and/or other energy conservation measures implemented by the PHA)

indicating probability of a significant change in reasonable consumption requirements and changes in utility rates.

(b) *Revision as a result of rate changes.* The PHA may revise its allowances for resident-purchased utilities between annual reviews if there is a rate change (including fuel adjustments) and shall be required to do so if such change, by itself or together with prior rate changes not adjusted for, results in a change of 10 percent or more from the rates on which such allowances were based. Adjustments to resident payments as a result of such changes shall be retroactive to the first day of the month following the month in which the last rate change taken into account in such revision became effective. Such rate changes shall not be subject to the 60 day notice requirement of § 965.502(c).

§ 965.508 Individual relief.

Requests for relief from surcharges for excess consumption of PHA-purchased utilities, or from payment of utility supplier billings in excess of the allowances for resident-purchased utilities, may be granted by the PHA on reasonable grounds, such as special needs of elderly, ill or disabled residents, or special factors affecting utility usage not within the control of the resident, as the PHA shall deem appropriate. The PHA's criteria for granting such relief, and procedures for requesting such relief, shall be adopted at the time the PHA adopts the methods and procedures for determining utility allowances. Notice of the availability of such procedures (including identification of the PHA representative with whom initial contact may be made by residents), and the PHA's criteria for granting such relief, shall be included in each notice to residents given in accordance with § 965.502(c) and in the information given to new residents upon admission.

APPENDIX E

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

[Filed Jan. 12, 1998]

C.A. #97-2302

JACKIE MCDOWELL, *et al.*
Plaintiffs,

vs.

PHILADELPHIA HOUSING AUTHORITY, *et al.*
Defendants.

ORDER

AND NOW, This 12th day of January, 1997[8], this matter having come before the Court for approval of a settlement in this action, and for award of attorneys fees, and the Court, having considered all papers filed and proceedings held in connection, with said motion, having held a hearing and good cause appearing therefore, it is hereby ORDERED:

1. This Court has jurisdiction over the subject matter of this action and over all parties to this action; including all members of the class as that term is defined in the Order of this Court of May 21, 1997.

2. The Stipulation attached to this Order is incorporated herein by reference and entered as an Order of this Court.

3. Defendants Philadelphia Housing Authority, John White and Barry Miller and their successors shall abide by an implement the terms in the attached Stipulation.

4. This Court hereby finds and concludes that the notice given to the Class was the best practicable under the circumstances and fully satisfies the requirements of Rule 23 of

the Federal Rules of Civil Procedure and the requirements of due process.

5. This Court hereby awards plaintiffs' counsel for services performed in this litigation, attorneys fees in the amount of $10,324.00.

6. Without affecting the finality of this judgment, the Court hereby reserves and retains continuing jurisdiction over all matters relating to the administration and effectuation of the Stipulation hereby approved.

BY THE COURT:

/s/ _____
U.S. DISTRICT COURT JUDGE

Entered: 1-12-98
Clerk of Court

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

C.A. #97-2302

JACKIE MCDOWELL, *et al.*
Plaintiffs,

vs.

PHILADELPHIA HOUSING AUTHORITY, *et al.*
Defendants.

STIPULATION

1. The parties have been advised of and have consented to the terms and provisions of this stipulation.

2. The class has been certified pursuant to F.R.C.P. 23(b)(2) and the class shall consist of all Philadelphia Housing Authority (hereinafter "PHA") tenants for whom PHA pays or should have paid gas utility allowances since September 1, 1996.

3. PHA shall increase all gas utility allowance payments by an amount sufficient to reflect PGW's current gas rate of .712 per ccf and GCR of .16517 per ccf, which is an increase of approximately 17%, effective October 1, 1996.

4. By October 31, 1997, PHA shall issue retroactive gas utility allowances payments to insure that the gas utility allowance of all class members are increased by an amount sufficient to reflect PGW's current gas rate of .712 per ccf and GCR of .16517 per ccf, which is an increase of approximately 17%, for the period of time from October 1, 1996, through March 31, 1997.

5. Where a tenant of record became head of household due to the death or incapacity of the preceding head(s) of house-

hold, PHA shall provide the relief, pursuant to paragraphs 3-5 of this stipulation, to the current head of household for the period of time when the tenant of record was head of household and shall also provide the same relief by paying the tenant of record for the tenure of the preceding head(s) of household. Under these circumstances, no payment shall be made to the preceding head(s) of household.

6. PHA shall, commencing with 1997, review, at least annually, the basis on which utility allowances have been established and, if reasonably required, shall establish revised allowances.

7. The annual review shall include all changes in circumstances indicating probability of a significant change in reasonable consumption requirements and changes in utility rates.

8. PHA may revise its allowances for resident-purchased utilities between annual reviews if there is a rate change except that PHA shall revise its allowances for resident-purchased utilities between annual reviews if any change in utility rates, by itself or together with prior rate changes not adjusted for, results in a change of 10 percent or more from the rates on which the allowances were based.

9. Adjustments to utility allowances shall be retroactive to the first day of the month following the month in which the last rate change taken into account in such revision became effective.

10. PHA shall provide notice of this proposed settlement by mailing the notice attached hereto as Exhibit "II" by first class mail, postage prepaid to all class members.

11. In the event that the notice to any class member is returned because the the class member is deceased, then notice shall be promptly mailed to the succeeding family member who is head of household of the unit.

12. In the event that the notice to any class member is returned because the class member has moved and left no forwarding address, the defendants shall employ a locator service to determine the class member's current address and notice to this class member shall be promptly mailed to the class member's current address by first class mail, postage prepaid.

13. Named plaintiff Jackie McDowell shall receive the same relief as all class members.

14. PHA shall pay Community Legal Services, Inc. $10,324.00 in attorneys fees for the prosecution of this action. CLS shall only be entitled to additional attorneys fees in this matter if the defendants fail to comply with the terms of this stipulation and the plaintiffs prevail on a motion to enforce or a motion for contempt.

15. For the period of time from the date of this settlement through December 31, 2002, PHA shall provide a written summary report of all future utility allowance reviews to counsel for plaintiff within 30 days of each annual or interim review. The report shall contain the following information:

a) The circumstances considered;

b) The relevant changes in the circumstances considered;

c) The amount of any resulting adjustment;

d) The effective date of any resulting adjustment.

16. PHA shall not be required to supply the summaries required by paragraph 15 after December 31, 2002, unless the plaintiffs file, prior to October 31, 2002, a motion to have the monitoring and summaries continue. The court shall grant such a motion if PHA has not complied with the terms of this stipulation.

17. The parties expressly understand and agree that the terms and conditions of this stipulation are in compromise

and full accord and satisfaction of a disputed claim and that the defendants admit no liability and settle this claim solely for the purpose of terminating this dispute and litigation between the parties.

18. Upon the Court's entry of the final order approving the settlement in this matter, PHA shall serve the notice attached as Exhibit "III" upon all class members. Service shall be made by first class mail, postage prepaid.

19. The court shall retain continuing jurisdiction over compliance with this stipulation.

/s/ Michael Donahue
Michael Donahue, Esquire
George D. Gould, Esquire
Paul A. Brooks, Esquire
Community Legal Services, Inc.
1424 Chestnut Street
Phila., PA 19102
215-981-3700

Counsel for Plaintiff

/s/ Denise J. Baker
Denise J. Baker, Esquire
Crystal T. Bryant, Esquire
Phila Housing Authority
2012 Chestnut Street
Phila., PA 10103
215-981-6127

Counsel for Defendants

APPENDIX F

Philadelphia Housing Authority
Determination of Gas Utility Allowances
For Scattered-Sites

March 2003—FINAL REPORT

Submitted to: Joel M. Sweet, Esquire
Wolf, Block, Schorr and Solis-Cohen LLP
1650 Arch Street
22nd Floor
Philadelphia, PA 19103

Submitted by: /s/ Ish Sud Ph.D.
Ish Sud Ph.D., President

/s/ Elizabeth Reid McGowan
Elizabeth Reid McGowan, C.E.M.

Sud Associates, P.A.
1813 Chapel Hill Road
Durham, NC 2707
919/493-5277

Philadelphia Housing Authority
Determination of Gas Utility Allowances for Scattered-sites

March 2003

I. INTRODUCTION

The objective of this study is to examine the Philadelphia Housing Authority's (PHA's) existing gas utility allowances for scattered-sites to determine if they comply with the standards set forth in 24 CFR 965.505, which requires that utility allowances "approximate a reasonable consumption of utilities by an energy-conservative household of modest circumstances consistent with the requirements of a safe, sanitary, and healthful living environment".

Further, if the existing allowances do not comply with that regulation, we shall develop a proposal for gas utility allowances consistent with HUD regulations as outlined in 24 CFR 965.505 and expanded upon in the *Utility Allowance Guidebook*, a supplementary reference provided by HUD to assist housing authorities in interpreting the HUD regulations.

II. EXISTING GAS ALLOWANCES AND ACTUAL GAS USAGE

PHA's scattered-site inventory includes several thousand housing units of a variety of housing types located at various sites throughout Philadelphia. Although the housing units are unique, they can be categorized in terms of housing type (detached, semi-detached, or inner row units), by the fuel sources used for space heating, cooking, and domestic water heating, and the size, by number of bedrooms. The designations are coded as DGGG, IGGG, and SGGG, where the first character refers to the location type (detached, inner-row, and semi-detached, respectively), while the second through fourth characters refer to the space heating fuel, the cooking fuel, and the water heating fuels, respectively (where G=Gas, O=Oil, and

E=Electricity.) The numeric suffix refers to the number of bedrooms in the unit. Thus, a unit coded as DGGG-2 represents a two bedroom detached home with gas space heating, water heating and cooking.

As of December 2002, PHA provided a gas utility allowance to residents of 4223 scattered-site units. Table 1 shows the distribution of these units among the various utility code designations.

Table 1
Distribution of Occupied Scattered-site Homes – December 2002

Category	Description	1BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	3	12	23	17	7	7
IGGG	Inner Row; Gas heat, cooking, and DHW	26	390	1,884	434	428	157
SGGG	Semi-detached; Gas heat, cooking, and DHW	4	90	365	166	127	67
IOGG	Inner Row; Oil heat; Gas cooking and DHW	—	—	7 *	3 **	1 **	—
SOGG	Semi-detached; Oil Heat; Gas Cooking and DHW	—	1 **	2 **	2 **	—	—

* All but one of these homes have received replacement gas furnaces, and need to have the utility code designation changed to reflect gas space heating.

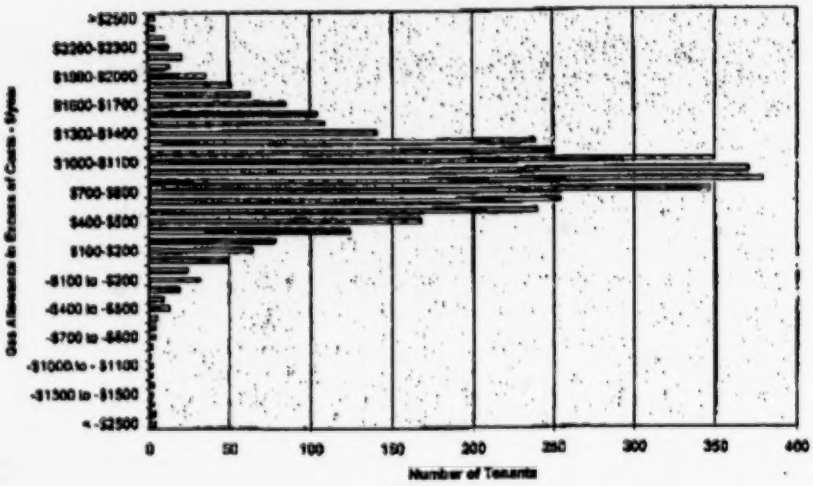
** All of these homes have received replacement gas furnaces, and need to have the utility code designation changed to reflect gas space heating.

This study is based upon analysis of a complete year of data for all scattered-site addresses that are currently receiving a gas utility allowance from PHA and for which a full year of gas consumption data was available. Philadelphia Gas Works (PGW) provided the gas consumption data in the form of records containing fields for Unit Number, Number of Bedrooms, Address, Apartment Number, Zip Code, Total Annual Usage (in ccf), Total Annual Charges (in dollars), and Average Monthly Charges (in dollars). We correlated these records with a list of PHA units receiving gas allowances to include identifiers for the PHA utility codes and occupancy status.

Using just the raw PGW gas data sorted by utility code category and normalized for weather, we compared the existing utility allowances to the actual gas consumption data for each allowance category. This was done by multiplying PHA's existing monthly gas consumption allowance for each category by 12 months per year to obtain an annual gas consumption allowance, and then comparing it to the normalized annual gas consumption for each unit. The normalized annual consumption for each unit was determined by multiplying the total usage figure provided by PGW by a weather normalization factor of 1.14. (The normalization process is described in greater detail in Step 6 of Section IV of this report.) We found that the utility allowance exceeded the normalized actual gas consumption in over 96% of the scattered-site units.

After determining that over 96% of the scattered-site units had allowances that exceeded their normalized annual gas consumption, we examined the magnitude by which PHA's existing scattered-site gas allowances exceeded the actual tenant consumption. As an initial check, we compared the dollar value of the utility allowances paid to tenants to their actual gas costs for the calendar year 2002. Figure 1 shows a graph of the amount by which PHA's scattered-site gas allowance payments exceeded the actual gas costs. The numbers on the left hand side show the difference between the gas allowance payments and actual gas costs; the numbers across the bottom of the chart indicate the number of household included in each cost differential range.

Figure 1
Gas Allowances Received in Excess of Actual Gas Costs - 2002



From Figure 1, it is apparent that the existing gas allowance payments exceed the gas costs of the majority of the scattered-site households. In most cases, the gas allowances greatly exceed the actual gas costs. On average, the gas allowances exceeded actual gas costs by $900 per year.

As a more exact comparison, we compared the normalized actual gas consumption figures to the annual gas consumption allowances provided by PHA. Figure 2 shows a graph of the percentage of the PHA's existing gas consumption allowance which is actually consumed in each household. This percentage is based upon the normalized gas consumption, so that the weather for the year during which data was collected has been accounted for.

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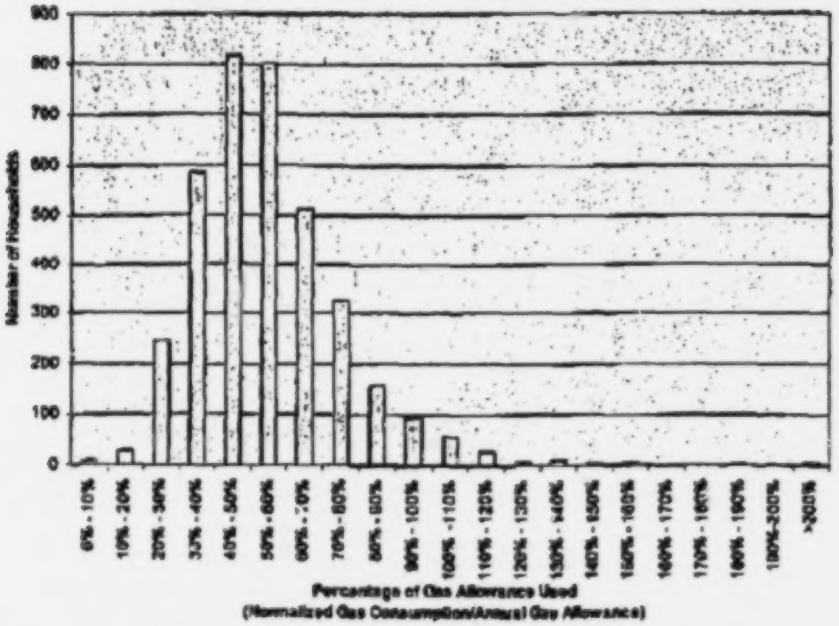
Figure 2
Comparison of Normalized Gas Consumption to Annual Gas Allowance



As seen in Figure 2, the vast majority of PHA's scattered-site households require far less gas than is provided by the existing gas allowance. On average, the scattered-site households actually require only 55% of their gas utility consumption allowance to buy gas.

Due to the large differences between the existing consumption allowances and the average consumption data, we conclude that the existing allowances do not "approximate a reasonable consumption of utilities by an energy-conservative household of modest circumstance" as called for by the governing standard, 24 CFR 965.505(a). Accordingly, we propose that new gas utility allowances be calculated using the methodologies in the *Utility Allowance Guidebook* (September 1998 Edition) as described below.

III. DETERMINATION OF NEW GAS UTILITY ALLOWANCES

HUD's standards for determining utility allowances are provided in 24 CFR 965.505. The *Utility Allowance Guide-*

book is a supplementary document that provides additional reference for housing authorities in calculating utility allowances. The calculation methodologies used in this analysis have closely followed the guidelines in the *Utility Allowance Guidebook*. While the *Guidebook* suggests a number of permissible methods for meeting the requirements of 24 CFR 965, it also points out that other approaches may also be acceptable. In a few specific situations where we have deviated from the methods specifically stated in the *Guidebook* (such as when there was not a statistically valid sample of data for a particular category) we have used an alternative method which is intended to be as uncomplicated as possible while being consistent with the HUD guidelines. We also made sure that any alternative methods would err on the side of providing a more generous allowance to the residents in that allowance category. These deviations will be explained in more detail as they are encountered in this report.

The *Utility Allowance Guidebook* provides two basic methodologies that may be used to determine utility allowances: engineering-based methods and consumption-based methods. Engineering-based methods require inputting specific details regarding the construction of the house into a software program to provide a building energy simulation for the building. Since a unique building simulation is required for each different housing type, this methodology would be prohibitively costly and impractical to implement for developments which include a variety of different housing plans. Consumption-based methods use a statistical sampling of actual historical utility data to determine appropriate utility allowances. Chapter 4 of this reference includes a decision tree[1] to determine the most appropriate methodology for a Housing Authority's particular circumstances. Table 2 shows a summary of the pertinent questions from the decision tree which were used to

[1] A copy of the decision tree is included in Appendix A.

determine the most appropriate methodology for determining the gas utility allowances for PHA's scattered-sites.

Table 2
Decision Tree for Selecting a Utility Allowance Method

Question	Answer	Next Step
Do you feel the current allowances are reasonable based on your knowledge of the regulations?	No	The utility allowances should be recalculated.
Are the consumption data relatively easily accessible?	Yes	Go to the next question
Are the consumption data of good quality, or can they be improved to an acceptable level?	Yes	Go to the next question
Has the HA modernized its development within the last year?	No. A small number have been completely modernized; others have been partially modernized.	Go to the next question
Has the HA modernized its development within the last three years?		Go to the next question
Does the HA provide an allowance for space heat?	Yes	Go to the next question
Does the HA have on file valid heat loss calculations and is the heating system efficiency known?	No	Go to the next question
Is the HA willing to hire a consultant to perform heat loss calculations and/or to determine the efficiency of the heating system?	Not feasible due to the large number of differing types of units. It would be prohibitively costly to hire a consultant to do the large number of calculations needed.	The use of a consumption-based methodology is recommended.

Consistent with HUD's *Utility Allowance Guidebook* and in light of the varied nature of PHA's scattered-site housing inventory, we recommend that the gas allowances for PHA's scattered-sites be determined using a consumption-based methodology

IV. CONSUMPTION METHOD FOR DETERMINING GAS UTILITY ALLOWANCES

Chapter 6 of the HUD *Utility Allowance Guidebook* provides 8 steps for determining utility allowances using his-

torical consumption data. We have followed these steps in calculating the gas allowances for this report.

Step 1: Define Allowable and Non-Allowable End Uses

Step 2: Determine the Time Frame of the Historic Consumption Data

Step 3: Develop the Appropriate Allowance Categories

Step 4: Collect the Consumption Data and Group Data by Allowance Categories

Step 5: Clean Up the Consumption Data and Check the Statistical Validity of the Sample

Step 6: Determine the Point of Central Tendency for Each Data Set

Step 7: Establish Standards for the "Energy Conservative" Household

Step 8: Convert Consumption Allowances to Dollar Allowances

Step 1: Define Allowable and Non-Allowable End Uses

For residential gas usage, the primary end-uses of the fuel include space heating, domestic water heating, and cooking. Since all of these are acceptable under HUD guidelines, no adjustments of the consumption data were required to exclude data for non-allowable end uses. (The distinction between allowable and non-allowable usages is generally more relevant to the determination of electric allowances.)

Step 2: Determine the Time Frame of the Historic Consumption Data

There are several acceptable options to define the time period over which consumption data is studied. Two of the most common include single-year fixed database and a three-year rolling base of consumption data.

A single-year fixed database uses consumption data from a single year and then normalizes the data to account for the effects of weather during that base year. This is done by examining the published weather data for the base year ("degree days") and comparing the base year to the average weather for the same area over a database of thirty years and adjusting the usage figures accordingly. Normalizing for weather ensures that the particular weather patterns during the base year (such as a particularly warm or cold winter) do not result in under- or over-calculating the allowances based upon that particular year's data. This method has the advantage of not requiring that consumption data be obtained and analyzed each year.

The three-year rolling base looks at three years of consumption data for a given number of housing units. Utility allowances are changed every year under this scheme. Since it examines data over time, it automatically incorporates any changes in consumption due to aging of the housing and equipment as well as installation of weatherization or new equipment. Since collection of utility data can sometimes be difficult, and this method requires that new data be collected and new allowances be recalculated each year, many housing authorities find this method to be costly and impractical.

The analysis used in this report is based upon a single-year fixed database normalized for weather using consumption data from January 2002 to December 2002.

Step 3: Develop the Appropriate Allowance Categories

Most traditional public housing developments consist of large buildings containing multiple housing units of a similar design and construction located at a single site, or adjacent sites. PHA's scattered-sites (which are the only units relevant to PHA's current allowance program) are different from the traditional public housing developments in that they literally are scattered throughout the community. Scattered-site hous-

ing provides unique challenges in determining utility allowances because, by their nature, scattered-sites do not have the uniformity of design and construction types typical of traditional housing developments.

The *Utility Allowance Guidebook* discusses the selection of allowance categories. On page 89, it states that "the process of defining the allowance categories involves finding a proper balance between the administrative burden of large numbers of categories and the inequities which might result from the failure to recognize appropriate factors accounting for significantly different consumption requirements among households."

Further, 24 CFR 965.505(d) outlines HUD's requirement that Housing Authorities take into account the following factors:

(1) The equipment and functions intended to be covered by the allowance for which the utility will be used. For instance, natural gas may be used for cooking, heating domestic water, or space heating, or any combination of the three;

(2) The climatic location of the housing projects;

(3) The size of the dwelling units and the number of occupants per dwelling unit;

(4) Type of construction and design of the housing project;

(5) The energy efficiency of PHA-supplied appliances and equipment;

(6) The utility consumption requirements of appliances and equipment whose reasonable consumption is intended to be covered by the total resident payment;

(7) The physical condition, including insulation and weatherization, of the housing project;

(8) Temperature levels intended to be maintained in the unit during the day and at night, and in cold and warm weather; and

(9) Temperature of domestic hot water.

Below, we consider each of these factors and their relevance to determining the gas utility allowances for PHA's scattered-sites.

(1) The equipment and functions intended to be covered by the allowance for which the utility will be used. For instance, natural gas may be used for cooking, heating domestic water, or space heating, or any combination of the three.

In addition to classifying the scattered-site housing stock by housing type (detached, semi-detached, or inner row units) and size (number of bedrooms), PHA's existing allowance categories classify the housing stock by the fuel sources used for space heating, cooking, and domestic water heating. The designations are coded as DGGG, IGGG, and SGGG, where the first character refers to the location type (detached, inner-row, and semi-detached, respectively), while the second through fourth characters refer to the space heating fuel, the cooking fuel, and the water heating fuels, respectively (where G=Gas, O=Oil, and E=Electricity). The numeric suffix refers to the number of bedrooms in the unit. Thus, a unit coded as DGGG-2 refers to a two bedroom detached home with gas space heating, water heating and cooking.

(2) The climatic location of the housing projects

All of the PHA's scattered-sites are located in the same climatic location. By using normalized gas consumption data, the climate is automatically accounted for. The degree days for Philadelphia for the year studied, along with reference data on standard climate conditions, are used to normalize the data.

(3) The size of the dwelling units and the number of occupants per dwelling unit

PHA's existing allowance categories are differentiated by number of bedrooms in order to account for the size of units and number of occupants.

(4) Type of construction and design of the housing project

PHA's allowance categories differentiate units by whether they are inner-row units, semi-detached units, or detached housing units. This addresses whether the unit has relatively little exterior wall exposure to the outdoors in proportion to its size (inner-row units), a moderate amount (semi-detached), or a large amount (detached units). Since the amount of exterior wall exposure has a greater impact on how much heating energy will be required than the exterior finish on a frame wall (brick vs. stucco vs. wood siding), the distinction between inner-row, semi-detached and detached units is given primary importance in describing the building construction and design.

(5) The energy efficiency of PHA-supplied appliances and equipment

PHA has replaced existing heating systems with new gas furnaces in a number of units. In order to determine if the replacement of furnaces alone resulted in consistently lower energy usage, we compared the energy consumption from 471 inner-row scattered-site units that had received new furnaces within the past 5 years with the usage of 1726 inner-row units that had not. We found that the installation of new furnaces was not a consistent indicator of lower energy usage. Consequently, we feel that it is not worthwhile to differentiate separate utility allowance categories based on this criterion.

(6) The utility consumption requirements of appliances and equipment whose reasonable consumption is intended to be covered by the total resident payment

For residential gas usage, the primary end-uses of the fuel include space heating, domestic water heating, and cooking. Since all of these are acceptable under HUD guidelines, no adjustments of the consumption data were required to exclude data for non-allowable end uses. (The distinction between allowable and non-allowable usages is generally more relevant to the determination of electric allowances, where items like toasters and hair dryers need to be included in engineering-based simulations, but items such as air-conditioning should be excluded.)

(7) The physical condition, including insulation and weatherization, of the housing project

Due to the non-uniform nature of PHA's scattered-sites, the physical condition of the units vary considerably with respect to insulation and weatherization. PHA has completely modernized approximately 500-600 units. The effect of modernization on the energy usage was examined by comparing the average energy usage of 159 modernized inner-row houses with 2034 non-modernized inner-row houses. While modernization generally decreased the gas consumption of the homes, due to small percentage (<10%) of homes which have currently undergone modernization, the inclusion of these homes in the overall utility allowance calculations was not found to have a significant effect on the overall allowance recommendations. Because there is currently not a large enough group of completely modernized homes to provide statistically valid sample sizes to determine gas allowances for modernized detached or semi-detached housing, and due to the extra administrative burden that administering extra allowance categories would impose, we would not recommend creating separate allowance categories based upon physical condition of the building at this time. As more houses are modernized, however, we recommend that PHA consider establishing separate allowance categories for modernized vs. non-modernized housing.

(8) Temperature levels intended to be maintained in the unit during the day and at night, and in cold and warm weather; and

(9) Temperature of domestic hot water

Specifying temperature levels is generally more relevant to engineering-based building simulations. In consumption analyses, improperly high temperature settings will show up as higher than normal usage.

In summary, HUD recommends that Housing Authorities establish separate categories of utility allowances for different dwelling sizes (in terms of number of bedrooms). It further recommends that separate allowance categories be established for the dwelling unit's location within a building, to account for the fact that housing units which have other heated dwellings adjacent to them have lower heating requirements than detached housing, whose walls are adjacent to unheated outdoor air. PHA's current allowance categories, which take into account unit size and location in addition to type of utilities used, meet HUD's criteria for an adequate number of allowance categories.

Step 4: Collect the Consumption Data and Group Data by Allowance Categories

As the initial step in this analysis, we requested utility consumption for all of the scattered-sites from the gas utility, Philadelphia Gas Works (PGW.) PGW provided this data in an electronic format. Each consumption record from PGW contained fields for Unit Number, Number of Bedrooms[2], Address, Apartment Number, Zip Code, Total Annual Usage (in ccf), Total Annual Charges (in dollars), and Average

[2] The fields for unit number and number of bedrooms are not part of the PGW record-keeping system. This information was "tied to" the addresses which were sent to PGW when gas consumption information was requested, and was returned with the consumption information.

Monthly Charges (in dollars). We correlated these records with a list of PHA units receiving gas allowances to include identifiers for PHA's utility codes and occupancy status. The utility codes are used as the allowance category identifier.

Step 5: Clean Up the Consumption Data and Check the Statistical Validity of the Sample

As we correlated the gas bills with the list of scattered-site addresses, we also cleaned up the data. Not all of the gas-heated scattered-site units were occupied during the base year during which consumption data was collected. Since PHA maintains a designation code denoting whether a unit is occupied, vacant, or undergoing renovation, only data from units which were designated as being occupied were included in the analysis dataset.

PGW informed us that any records that they sent to us which showed a consumption of zero denoted an address for which they had fewer than 10 months of utility data available during the sample period of January 1, 2002-December 31, 2002. This applied to 282 units. In addition, by comparing the average monthly gas cost to the annual gas cost, we were able to determine that a number of the gas records were based upon either 11, 13, or 14 bills rather than the expected 12 bills per year. Since the data examined was based upon the calendar year, it was likely that either a missed or additional bill during the period might involve the normally high gas-usage months of December or January. Consequently, we chose to exclude the 155 records which were not based upon 12 gas bills.

There were 12 gas consumption records which had utility code designations which identified them as oil heated homes.[3] During the course of this investigation, we learned

[3] There were an additional 4 homes with oil heating utility code designations, but they were included among the records for which PGW bills were not available.

that all but one of the 16 units with oil-heating utility code designations units had been converted to gas space heating, and were thus improperly coded. These records were excluded from the statistical analysis. In addition, there were 73 addresses which we were unable to match with PGW gas bills by the time this analysis was done.

The cleanup of data resulted in a total of 3,701 records, distributed as shown in Table 3.

Table 3
Number of Data Points - Full Year of Data in Relevant Categories

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	2	12	22	12	6	6
IGGG	Inner-row; Gas heat, cooking, and DHW	19	324	1677	374	394	146
SGGG	Semi-detached; Gas heat, cooking, and DHW	4	77	312	150	111	63

Although there were a large number of bills available, this did not result in a large sample size of data in every allowance category. In some cases, the small sample size indicates that the statistical validity of any results involving the data would be questionable. In most cases, the small sample size is primarily the result of an allowance category which had very few members in it. Table 4 shows a side-by-side comparison of the number of gas data points available in each category and the number of occupied homes in the categories.

Table 4
Number of Data Points Available / Number of Occupied Scattered-site Homes

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	2 / 3	12 / 12	22 / 23	12 / 17	6 / 7	6 / 7
IGGG	Inner-row; Gas heat, cooking, and DHW	19 / 28	324 / 390	1677 / 1884	374 / 434	394 / 428	146 / 157
SGGG	Semi-detached; Gas heat, cooking, and DHW	4 / 4	77 / 90	312 / 365	150 / 168	111 / 127	63 / 67

The standard for statistical validity suggested by HUD is that there be a 95% probability that the average of the sample

is within 10% of the average for the entire population. The formula used to determine the resulting valid sample size[4] is:

valid sample size=(3.84* Variance)/(0.1 * Sample Average)^2

The numbers which are shown as shaded in Table 4 represent allowance categories for which there was not a statistically valid sample size of data available for the category. Although the number of shaded boxes in the table gives the impression that this affects a large proportion of the allowance categories, the total number of homes included is only 64, or 1.5% of the scattered-site homes receiving utility allowances.

The reader may wonder why we considered 12 units to be a valid sample size for the DGGG-2 category, but we considered 12 units to be inadequate for DGGG-4, and 19 units inadequate for IGGG-1. This is based upon the variability of the data within each dataset. There was significantly less variation among the records in the DGGG-2 category than there was in either DGGG-4 or IGGG-1.

We made additional checks to ascertain that the data used was reasonable. The *Utility Allowance Guidebook* notes that there may be a variety of causes which may cause excessive variability in the dataset, and suggests that it is appropriate to drop the top and bottom 10% of all readings in order to reduce the variability of the sample to increase its statistical validity. This can help ensure that unusually high or low data points are not allowed to skew the results for the entire sample. Where the existing sample of raw data was high enough to allow this, the top and bottom 10% of data points were dropped from the dataset. Where the existing sample size was already unusually small, this was not done. The resulting number of data points which were available for analysis is shown in Table 5.

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[4] *Utility Allowance Guidebook*, at page 96.

Table 5
Number of Data Points Used in Calculations *

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG **	Detached; Gas heat, cooking, and DHW	***	10	18	12	6	6
IGGG	Inner-row; Gas heat, cooking, and DHW	***	260	1343	300	308	118
SGGG	Semi-detached; Gas heat, cooking, and DHW	***	83	249	120	89	51

* Unless noted otherwise, all numbers reflect dropping top and bottom 10% of values in dataset to improve variability of data

** Due to small amount of data available, all source data was used in 4, 5, and 6 bedroom categories.

*** There was inadequate data available to determine one bedroom usages with statistical validity.

Values shown for one bedroom allowances in following tables are based upon two bedroom usage.

There was inadequate data available to ensure statistical validity of the results for any of the one bedroom units regardless of housing type. According to the *Utility Allowance Guidebook*, if there is not enough data available to provide a statistically valid sample size, and additional data is not available, the housing authority should consider combining similar allowance categories. For this analysis, we chose to use the two bedroom values for the one bedroom allowances as well. This is a slightly more liberal substitution than combining the two categories. This method was chosen to make sure that the use of one-bedroom data in a combined-category calculation would not decrease the value of the allowance that would be given to two bedroom residents. Instead, it will overestimate the value of the one-bedroom categories. As an alternative, PHA could consider using determining the one bedroom allowances by calculating them as a proportionate fraction of the usage from a different size unit. Based upon the methodologies used in HUD-52667 (the HUD worksheet for deter

mining Section 8 allowances) one bedroom allowances could be estimated by multiplying the two-bedroom usage by 0.78.

Because there is only one oil-heated home (in category IOGG-3), there was not a meaningful sample size for analysis. Since this category includes only one home, PHA may wish to consider paying this gas bill directly to avoid the administrative burden of determining an allowance level for a single home. Alternatively, this unit could be given an allowance equal to a similar sized gas heated home.

The sample sizes for most of the detached housing units (with the exception of the two and three bedroom units) remain too small to ensure statistical validity, due primarily to the small populations in the utility allowance categories. Lacking additional data for detached housing units, these numbers were used.

Table 6 shows the average annual consumption levels which were used as the basis for this analysis.

Table 6

Average Annual Gas Consumption, ccf - Not Adjusted for Weather *

Category	Description	1 BR ***	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG **	Detached; Gas heat, cooking, and DHW	1110.0	1110.0	1163.8	1695.2	2193	2446.7
IGGG	Inner-row; Gas heat, cooking, and DHW	814	814	976.2	1243.8	1602.2	2018.7
SGGG	Semi-detached; Gas heat, cooking, and DHW	913	913	1140.9	1257.8	1747.8	1911.7

* Unless noted otherwise, all numbers reflect dropping top and bottom 10% of values in dataset to improve variability of data.

** Due to small amount of data available, all source data was used in 4, 5, and 6 bedroom categories.

*** There was inadequate data available to determine one bedroom usages with statistical validity.

Values shown for one bedroom allowances in following tables are based upon two bedroom usage.

Step 6: Determine the Point of Central Tendency for each Data Set

Once the statistically valid dataset for each allowance category has been determined, the next step is to determine the "typical" consumption for the category. This is referred to as the point of central tendency. This point can be defined by either the mean or the median of the data, at the discretion of the housing authority. For this analysis, the average (mean) was used.

When the median is used to determine the point of central tendency, the value of a single piece of data is used to characterize the entire group. If data is added to or removed from the dataset, the median will then shift to the value of a different discrete piece of data. Since there can be significant variation between adjacent points in the dataset, this can result in a significant shift in the median value based upon the addition or removal of a single data point. When the average is used, however, the effect of adding or removing data points is generally a smoother transition, because the variation in value is tempered out among all the data points. We prefer to use the average because it considers the value of every data point within the dataset rather than relying on one single value, making it a less volatile indicator than the median.

Since this analysis was based upon consumption data from a single year, we normalized the data for the effects of weather. Various organizations, including the National Oceanic and Atmospheric Administration, keep track of weather statistics over time. One such statistic is the Heating Degree Days (HDD), which is a rough indicator of how much heating is required. By multiplying the consumption data for a particular year by the ratio of the 30-year average HDD divided by the HDD for the particular year, the consumption data can be normalized to a typical year's energy use.

The 30-year average HDD for Philadelphia from 1941 to 1970, as tabulated in Appendix C of the *Utility Allowance Guidebook*, totaled 4865 degree days. The monthly heating degree days for the period January 2002 to December 2002 were obtained from the archives section of a NOAA website (at http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/cdus/degree_days/) and were found to total 4264 degree days. This showed that the year during which data was collected was milder than is typical for Philadelphia. To adjust for this, the usage data was multiplied by a normalization factor of 4865/4264, or 1.14.

The average gas consumption values, normalized and converted into monthly figures (by dividing by 12 months per year) are shown in Table 7.

Table 7
Average Monthly Gas Consumption, ccf, Normalized for Weather

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	105.5	105.5	110.6	161	208.3	232.3
IGGG	Inner-row; Gas heat, cooking, and DHW	77.3	77.3	82.9	118.1	152.2	181.8
SGGG	Semi-detached; Gas heat, cooking, and DHW	86.7	86.7	108.4	122.3	166.0	181.8

Step 7: Establish Standards for the "Energy Conservative Household"

According to CFR 965.505(a), "The objective of a PHA in designing methods of establishing utility allowances for each dwelling unit category and unit size shall be to approximate a reasonable consumption of utilities by an energy-conservative household of modest circumstances consistent with the requirements of a safe, sanitary, and healthful living environment."

The figures shown in Table 7 represent the *average* gas consumption by PHA scattered-site tenants for each allowance category. These numbers are strictly averages. Exceeding the average figure does not necessarily imply that the occupants are being wasteful. Consequently, the housing au-

thority must decide at what level of consumption the level changes from energy-conservative to wasteful.

The *Utility Allowance Guidebook* suggests three methods that may be used to set the standards for an energy conservative household:

1. *Statistical Method:* This method would statistically ensure that the consumption of most resident households would fall within the allowance standards by setting the consumption allowance equal to the mean plus one standard deviation.

2. *Percentile Method:* Rather than using the mean which was determined earlier, this method would divide all of the consumption data for a given allowance category into percentiles. A threshold level (e.g., the 85th percentile) would be selected, and the allowance would be set based upon the usage level at that percentile.

3. *Multiplier Method:* The Housing Authority can set a fixed percentage above the average which it considers within the acceptable guidelines for an energy conservative household, and apply it to the average. (e.g., if the Housing Authority considers usage levels within 10% of average to be acceptable, then the consumption allowance should be set at 1.10 times the average usage for the allowance category.) In the course of this analysis, we will refer to this multiplier as the "Energy Conservative Household Coefficient," or ECHC.

We chose to use the multiplier method analysis, as it has several advantages over the statistical and percentile methods. These include:

- Simplicity. Applying a multiplier to the point of central tendency is the simplest method.

- Difficulty in communicating results from the statistical method: From the analyst's standpoint, the statistical method is a simple method to apply. However, the concept of standard deviation is generally not well understood among laypeople. Since communication of results with tenants is important, this method was considered less desirable.
- Volatility of characterizing a dataset by the value of a single data point in the percentile method: This situation is similar to that of the choosing whether to use the average or the median to characterize each dataset. Like the median, the percentile method is based upon using the value of a single reading to characterize an entire allowance category. We feel that this places too much importance upon one data point, particularly when some datasets are relatively small and there can be sizeable differences between data point values.
- Flexibility. Because of the ease of application, is it simple to apply a multiplier across the board to the average values and compare the resulting allowable usages to the measured usages. In this way, it is possible to select a multiplier value which results in a desired level of residents at or below the allowable usage for most allowance categories.

In using the multiplier method for this analysis, the acceptable gas consumption level is determined by multiplying the average consumption for a particular household type by the Energy Conservative Household Coefficient (ECHC). For example, if usage up to 15% above the average usage is to be considered allowable, this coefficient should be 1.15. It is up to the housing authority to select an Energy Conservative Household Coefficient (ECHC) to determine the level of energy usage they find acceptable. The *Utility Allowance Guidebook* does not prescribe a fixed level that it considers as

an appropriate percentage of homes that would be considered as using an excessive amount of energy and would consequently receive an allowance level below their actual consumption level. It explicitly states that this decision is strictly left up to the Housing Authority.

Table 8 shows the acceptable monthly usage levels, normalized for weather, using an ECHC value of 1.15. This ECHC value means that the allowances would be based upon 115% of the average normalized gas consumption from homes in each allowance category.

Table 8
Acceptable Monthly Gas Consumption, ccf, Normalized for Weather
Energy Conservative Household Coefficient = 1.15

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	121.3	121.3	127.2	185.2	239.5	287.1
IGGG	Inner-row; Gas heat, cooking, and DHW	88.9	88.9	106.8	135.8	175.0	220.6
SGGG	Semi-detached; Gas heat, cooking, and DHW	99.7	99.7	124.7	140.8	190.9	208.8

As a point of reference, we compared the acceptable monthly gas consumption values (using an ECHC of 1.15) of Table 8 to PHA's existing scattered-site gas consumption allowances. PHA's current scattered-site gas allowances are shown in Table 9.

Table 9
Existing Monthly Gas Consumption Allowances, ccf

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	133.6	158.4	202.2	279.6	276.7	338.0
IGGG	Inner-row; Gas heat, cooking, and DHW	155.5	159.9	171.8	227.0	276.7	317.8
SGGG	Semi-detached; Gas heat, cooking, and DHW	165.7	181.8	211.0	250.4	289.8	330.0

The percentage differences between the proposed acceptable consumption levels (with ECHC = 1.15) and the existing gas utility allowances are shown in Table 10. A positive percentage change indicates that the recommended allowance exceeds PHA's existing consumption allowance.

Table 10
Percentage Change in Recommended vs. Existing Allowances
Energy Conservative Household Coefficient = 1.15

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	-9.2%	-23.4%	-37.1%	-33.8%	-19.4%	-21.0%
IGGG	Inner-row; Gas heat, cooking, and DHW	-42.8%	-44.4%	-37.8%	-40.2%	-36.8%	-30.5%
SGGG	Semi-detached; Gas heat, cooking, and DHW	-39.8%	-45.2%	-40.9%	-43.8%	-34.1%	-36.7%

Table 10 indicates that the proposed acceptable consumption allowances based upon and ECHC of 1.15 (shown in Table 8) are lower than PHA's existing scattered-site gas consumption allowances.

Is the difference in the proposed allowance levels and PHA's existing gas allowances a cause for concern? Does the fact that these proposed allowances are lower than the existing allowances imply that they were too restrictive? We examined these questions by comparing the proposed allowances to other benchmarks.

Since this analysis is based upon a consumption-based methodology, the results can inherently be expected to be more generous to the tenants than the results of a similar engineering-based methodology. The *Utility Allowance Guidebook* states that "by focusing on actual resident utility consumption rather than on recommended standards for utility use, the consumption methodology also tends to give less emphasis on energy conservation. In other words, if there is a trade-off between minimizing resident utility surcharges and maximizing energy conservation by residents, the consumption methodology will tend to favor the former over the latter."

Within the framework of the consumption-based methodology, we chose to apply a multiplier to the point of central tendency in order to determine the standards for the energy conservative household. An alternative method that HUD recommends is the statistical method, which defines the standards for the energy conservative household as equal to the

mean plus one standard deviation. For comparison purposes, we calculated those figures as well. Table 11 shows the values for the mean plus one standard deviation for each allowance category.

Table 11
Mean Plus One Standard Deviation - ccf/month

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	105.7	105.7	116.8	173.3	227.8	275.0
IGGG	Inner-row; Gas heat, cooking, and DHW	84.0	84.0	99.1	127.0	165.6	209.9
SGGG	Semi-detached; Gas heat, cooking, and DHW	90.1	90.1	119.0	128.6	181.4	204.2

The percentage differences are shown in Table 12. A positive percent difference indicates that the acceptable consumption level from Table 8 (using an ECHC of 1.15) exceeds the one calculated using the statistical method of using the mean plus one standard deviation.

Table 12
Percentage Difference – Acceptable Usage via ECHC of 1.15 vs. Mean Plus Standard Deviation

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	12.9%	12.9%	8.2%	6.4%	4.9%	-3.0%
IGGG	Inner-row; Gas heat, cooking, and DHW	6.5%	6.5%	7.2%	6.8%	5.4%	4.9%
SGGG	Semi-detached; Gas heat, cooking, and DHW	9.8%	9.6%	4.6%	6.5%	5.0%	2.2%

Table 12 indicates that with the exception of the 6 bedroom detached units, the proposed acceptable consumption levels calculated using an ECHC of 1.15 are higher than those calculated by the alternate statistical method suggested by HUD. This suggests that the use of the ECHC multiplier of 1.15 was appropriate, and generous by HUD standards.

As an additional check to determine whether the acceptable usage levels shown in Table 8 were reasonable, we compared the acceptable consumption levels in Table 8 to the actual gas consumption figures. The acceptable consumption levels in Table 8 exceeded the actual consumption of 81% of the scattered-site homes during 2002. When the actual consumption data was normalized to account for weather, we found that

the acceptable consumption levels of Table 8 exceeded the normalized consumption of 69% of the scattered-site homes.

Step 8: Convert Consumption Allowances to Dollar Allowances

The conversion of the acceptable gas consumption allowances to gas cost allowances is done by applying the current utility cost rates to the consumption. As of December 2002, the combined PGW residential gas rate is $1.10701/ccf with a customer charge of $12.00 per month. Table 13 shows the dollar utility allowances, rounded to the nearest dollar, based upon the acceptable usage levels shown in Table 8. Like Table 8, the allowances shown here are based upon 115% of the average usage for the category, determined by the application of the energy conservative household coefficient of 1.15.

Table 13
Acceptable Monthly Usage Cost, $, Normalized for Weather
Energy Conservative Household Coefficient = 1.15

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	$148	$148	$153	$217	$277	$306
IGGG	Inner-row; Gas heat, cooking, and DHW	$110	$110	$130	$192	$206	$256
SGGG	Semi-detached; Gas heat, cooking, and DHW	$122	$122	$150	$168	$223	$243

V. RECOMMENDATIONS

Based upon comparisons of PHA's existing gas allowances with average consumption data (normalized for weather effects), we conclude that PHA's existing scattered-site gas allowances do not "approximate a reasonable consumption of utilities by an energy-conservative household of modest circumstance" as called for by the governing standard, 24 CFR 965.505(a). We recommend that PHA update its gas consumption allowances for scattered sites.

Table 14 shows the recommended monthly gas consumption allowances for scattered-sites in ccf. These values are based upon the normalized average gas consumption levels with an Energy Conservative Household Coefficient of 1.15,

as explained above. (This table contains the same information shown in Table 8. It is repeated here for convenience.)

Table 14
Acceptable Monthly Gas Consumption, ccf, Normalized for Weather
Energy Conservative Household Coefficient = 1.15

Category	Description	1 BR	2 BR	3 BR	4 BR	5 BR	6 BR
DGGG	Detached; Gas heat, cooking, and DHW	121.3	121.3	127.2	186.2	239.6	287.1
IGGG	Inner-row; Gas heat, cooking, and DHW	88.9	88.9	105.8	135.8	175.0	220.8
SGGG	Semi-detached; Gas heat, cooking, and DHW	99.7	99.7	124.7	140.6	180.9	208.8

These allowances were determined by a sound, relatively simple method based upon HUD standards as outlined in 24 CFR 965.505 with further interpretative guidelines provided by the September 1998 *Utility Allowance Guidebook*. Where our methods deviated from those specifically outlined within the *Guidebook*, we selected alternative methods which were simple, within the spirit of the HUD guidelines, and intended to err on the side of generosity toward the PHA tenants.

These allowances were calculated using a consumption-based methodology, which HUD recognizes as a methodology which tends to provide more generous utility allowances.[5] As demonstrated within the report, the multiplier-based consumption methodology we chose resulted in allowances which were more generous than those from the alternative statistical method. Although these allowance levels are lower than PHA's existing scattered-site gas allowances, we feel that they are reasonable, but generous.

The corresponding cost allowances, based upon PGW rates as of December 2002, are shown above in Table 13. HUD regulations require periodic review of utility allowances to examine changes in utility rate schedules and requires revision when a rate change results in a change of 10% or more from the rates which were previously used to determine utility allowances. When the recommended monthly gas con-

[5] *Utility Allowance Guidebook*, at page 83.

sumption allowances have been approved, we will provide a copy of these allowances in a spreadsheet format to allow for ease of rate comparison and updating.

APPENDIX A

Decision Tree for Selecting a Utility Allowance Method

Exhibit 4.1
Decision Tree for Selecting a Utility Allowance Method

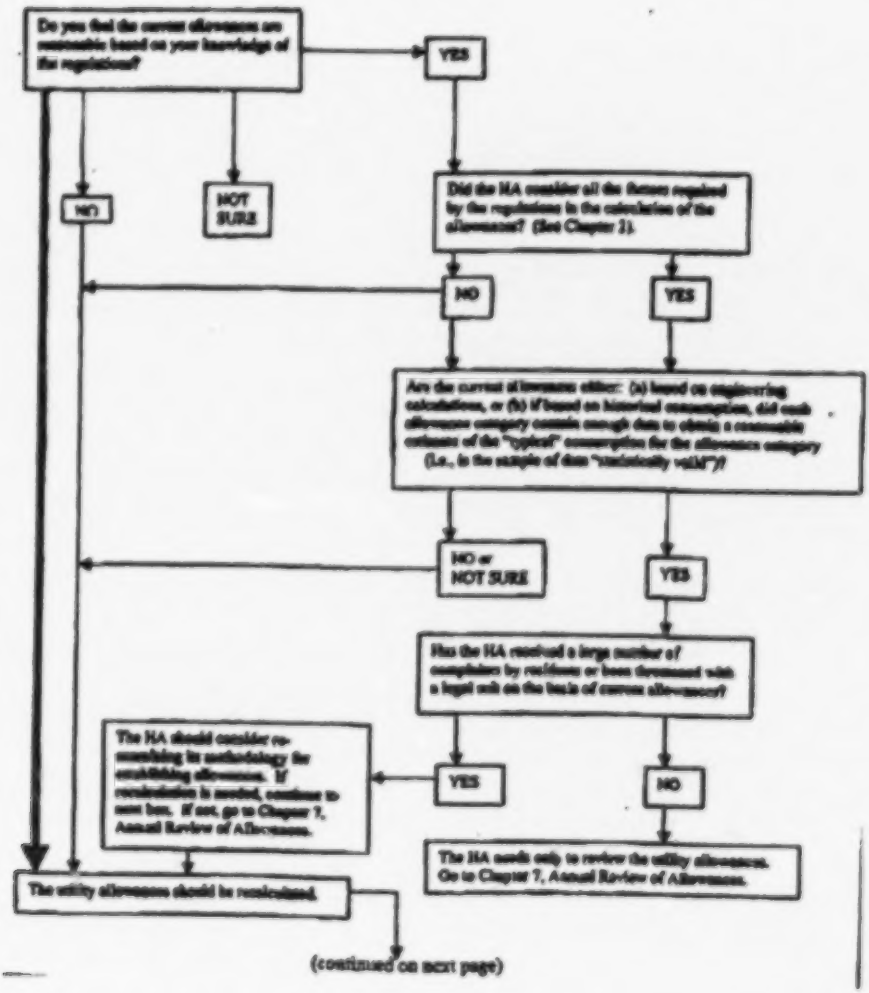
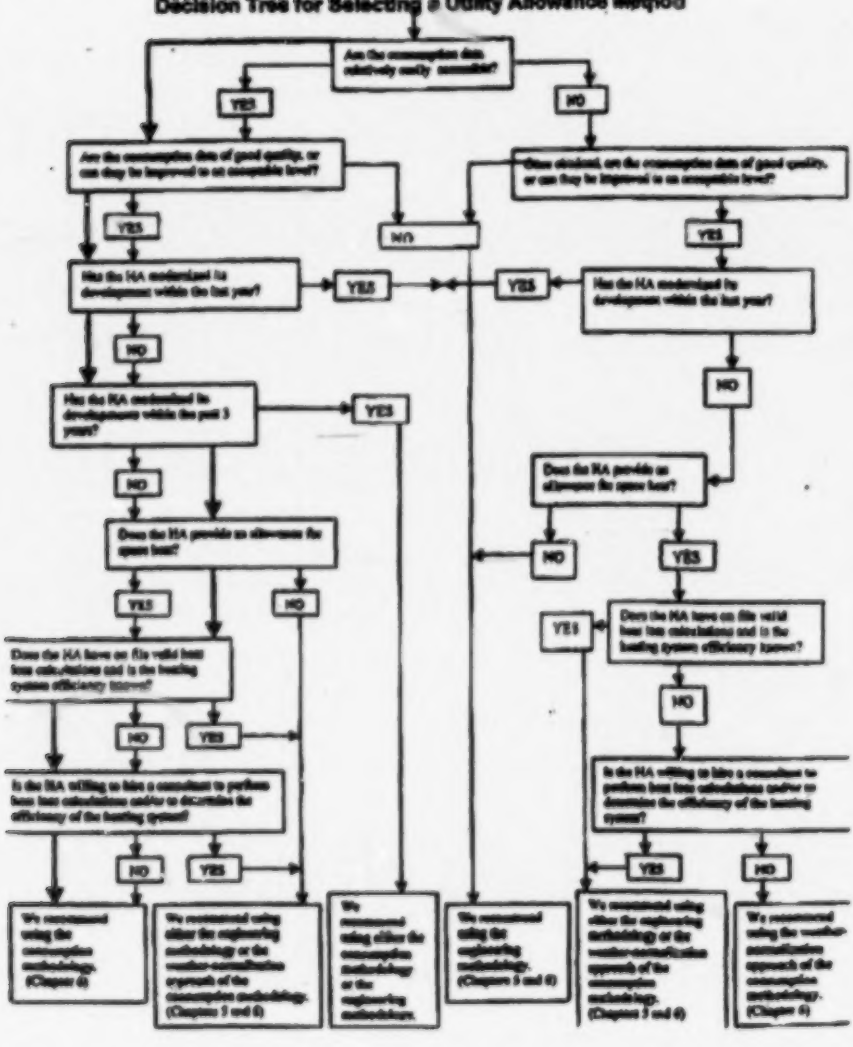


Exhibit 4.1 (cont.)
Decision Tree for Selecting a Utility Allowance Method



APPENDIX G

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

C.A. #97-2302

JACKIE MCDOWELL, *et al.*,
Plaintiffs,

v.

PHILADELPHIA HOUSING AUTHORITY, *et al.*,
Defendants.

MEMORANDUM OF THE PHILADELPHIA HOUSING AUTHORITY TO CORRECT STATEMENT IN PRIOR BRIEF

On March 7, 2003, The Philadelphia Housing Authority ("PHA") filed its sur-reply to Plaintiffs' Motion to Compel Compliance and for Sanctions. In its brief, PHA identified steps it had already taken to comply with the Court's 1998 Consent Decree. As to gas rate changes of 10 percent or more and customer charge increases made by the gas company after the 1998 Consent Decree, PHA also committed to make the members of the class whole for any provable loss resulting from not including those changes in its gas utility allowances.

PHA also demonstrated through the report of its expert, Sud Associates, Inc., that the consumption calculation PHA used during the relevant period greatly exceeded the class members' actual gas consumption during that time.[1] PHA

---

[1] In March 2003, PHA provided notice to residents and their counsel in this case explaining that PHA would *prospectively* apply Sud Associates' proposed revised gas consumption allowances, effective June 1, 2003. The notice and comment period required by regulations of the United

therefore proposed that it would recalculate gas utility allowances for PHA scattered-site residents for the entire period since the Consent Decree using adjusted gas rates in accordance with the Consent Decree, accounting for the gas company's increased customer charge, and applying PHA's proposed revised consumption calculations, which are based upon a report by Sud Associates. PHA further stated that on that basis:

> If the Court rules that PHA may provide retroactive utility allowance adjustments based upon Sud Associates's findings, PHA would pay more than $2.8 million to class member in retroactive utility allowance adjustments, even though 96 percent of PHA residents already receive gas allowances in excess of their actual gas costs.

PHA's Sur-reply at p. 20.

On May 22, 2003, Sud Associates informed PHA of an error in its calculations, and that the amount class members would be due if PHA used the gas company's adjusted rates and customer charges, and the revised consumption allowances determined by Sud Associates, is not $2.8 million. In a Declaration dated May 30, 2003, which is attached, Dr. Ish Sud, president of Sud Associates, explained that Sud Associates had attempted to calculate the amount actually paid by PHA for gas utility allowances by establishing the gas consumption and cost factors that PHA had used since July 1999 and then calculating how much PHA "would have paid in gas utility allowances had PHA: (a) adjusted gas rates in accordance with the Consent Decree; (b) accounted for the gas company's increased customer charge; and (c) retro actively applied our proposed revised consumption allowances starting in July 1999 (the first time after the Consent

---

States Department of Housing and Urban Development has elapsed without objection or comment from residents or plaintiffs' counsel.

Decree that gas rates changed by 10 percent or more)." Declaration of Ish Sud, P.E. ("Sud Decl.") at ¶ 4. Dr. Sud explained that:

> In calculating the amount PHA actually paid, we mistakenly used our proposed revised consumption calculations rather than the actual consumption calculations used by PHA during the relevant time period. As a result, we understated by $12,301,134 the amount PHA actually paid to residents in gas utility allowances. After confirming our error, I immediately contacted PHA's counsel to advise them of this fact.

Sud Decl. at ¶ 5.

Dr. Sud corrected the error by recalculating the amount PHA actually paid in gas utility allowances during the relevant period and determined that the correct amount is $32,806,662. Sud Decl. at ¶ 6. The amount PHA would have paid residents in gas utility allowances had it used the assumptions stated above is $23,322,625. *Id.* Dr. Sud concluded: "As a result of not using those assumptions, therefore, PHA *overpaid* residents for gas utility allowances in the amount of $9,484,037." *Id.*

In summary, according to Dr. Sud, if PHA were to recalculate gas utility allowances for the time period July 1, 1999 to December 31, 2002, using gas rates adjusted pursuant to the Consent Decree, accounting for the gas company's increased customer charge, and applying the revised consumption calculations proposed by Sud Associates, PHA would not owe residents any money for gas utility allowances. On the contrary, PHA *overpaid* scattered-site residents by $9,484,037.

Sud Associates' error emphasizes the fact that PHA residents have not suffered any provable injury as a result of PHA's alleged failure to comply with the Consent Decree. Just the opposite is true—residents received a huge windfall

over the last five years as a result of PHA's use of historically overly generous consumption calculations. Any further payments to residents are not warranted and would be inconsistent with the Brooke Amendment to the Housing Act, in which Congress legislated that public housing residents "shall pay as rent . . . 30 per centum of the family's monthly adjusted income." 42 U.S.C. § 1437a(1)(A). As described in PHA's surreply brief, the United States Supreme Court has explained that the Brooke Amendment is a two-way street—just as rent cannot be more than 30 percent of adjusted income, it cannot be less:

> The Brooke Amendment could not be clearer: as further amended in 1981, tenants could be charged as rent no more *and no less* than 30 percent of their income. This was a mandatory limitation on the individual family and its income.

Wright v. City of Roanoke Redevelopment and Housing Authority, 479 U.S. 418, 430, 107 S.Ct. 766, 773-74 (1987) (emphasis added).

Given the fact that, for virtually all PHA residents who receive gas allowances, the amount they received from PHA in gas allowances far exceeded the amount they paid for gas, residents have long been paying rent in an amount less than 30 percent of their adjusted income. For PHA now to pay residents more money in the guise of gas allowances would reduce even further below 30 percent the percentage of adjusted gross income residents have paid PHA for rent, contrary to the Brooke Amendment as interpreted by the United States Supreme Court.

By: /s/ _____
Alan C. Kessler
Judah I. Labovitz
Joel M. Sweet
Stephanie L. Kosta

Attorneys for Defendant,
The Philadelphia Housing Authority

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Dated: June 9, 2003

IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

C.A. #97-2302

JACKIE MCDOWELL, *et al.*,
Plaintiffs,

v.

PHILADELPHIA HOUSING AUTHORITY, *et al.*,
Defendants.

DECLARATION OF ISH SUD, PH.D., P.E.

1. I am the President of Sud Associates, P.A. My curriculum vitae is attached hereto as Exhibit A.

2. The Philadelphia Housing Authority, through its counsel, Wolf, Block, Schorr and Solis-Cohen LLP, retained Sud Associates to serve as a consultant in this litigation. In that capacity, Sud Associates performed several individual assignments for PHA.

3. The principal assignment was an analysis of gas consumption by residents of PHA scattered-site housing and, based upon that analysis, the development of recommendations in accordance with guidelines issued by the United States Department of Housing and Urban Development ("HUD") for revisions to PHA's gas utility allowances. Our analysis and recommendations are reflected in our report dated March 2003, which PHA submitted to the Court as Exhibit B to its Sur-Reply of Defendant The Philadelphia Housing Authority in Opposition to Motion to Compel Compliance And for Sanctions.

4. Another assignment Sud Associates performed for PHA was a computation of the amount PHA may have underpaid or overpaid in utility allowances as a result of PHA's alleged

failure to comply in a timely manner with all aspects of the Consent Decree. To do this, we established the gas consumption and cost factors that PHA had used since July 1999 to determine its gas utility allowances, in an attempt to calculate the amount actually paid by PHA for gas utility allowances. We then calculated how much PHA would have paid in gas utility allowances had PHA: (a) adjusted gas rates in accordance with the Consent Decree; (b) accounted for the gas company's increased customer charge; and (c) retroactively applied our proposed revised consumption allowances starting in July 1999 (the first time after the Consent Decree that gas rates changed by 10 percent or more). We concluded that, had PHA used the adjusted gas rates, the increased customer charge, and the revised consumption calculations, PHA would have paid $2,823,097 more than it actually had paid in utility allowances during the time period July 1, 1999 to December 31, 2002.

5. On May 22, 2003, I discovered that what we had informed PHA was wrong. In calculating the amount PHA actually paid, we mistakenly used our proposed revised consumption calculations rather than the actual consumption calculations used by PHA during the relevant time period. As a result, we understated by $12,307,134 the amount PHA actually paid to residents in gas utility allowances. After confirming our error, I immediately contacted PHA's counsel to advise them of this fact.

6. We have now corrected our error by calculating the amount PHA actually paid in gas utility allowances during the relevant period. That amount is $32,806,662. The amount PHA would have paid residents in gas utility allowances had it used the assumptions stated above is $23,322,625. As a result of not using those assumptions, therefore, PHA *overpaid* residents for gas utility allowances in the amount of $9,484,037.

7. The revised calculations were prepared by my colleague Elizabeth McGowan, C.E.M., in a spreadsheet. Both I and another colleague, Jessica Mandujano, Data Analyst, have independently reviewed and confirmed the accuracy of the design of the spreadsheet and the data used in the spreadsheet. We also have conducted spot checks of the calculations reflected in the spreadsheet. Additionally, we have compared the difference between our initial incorrect conclusion about the amount that PHA would have owed and the corrected analysis, and verified that the difference would be accounted for by the difference in the consumption allowances used in the original calculation and the corrected analysis.

8. The determination of the amount that PHA would have underpaid or overpaid during the period July 1, 1999 to December 2002, was performed independently and has no bearing upon our March 2003 study to determine appropriate gas consumption calculations pursuant to HUD's guidelines.

I declare under penalty of perjury that the foregoing is true and correct.

Date: May 30, 2003

/s/ Ish Sud
Ish Sud, Ph.D., P.E.

ISH SUD
President

Born
October 6, 1949 in Calcutta, India

Education
Ph.D./Mechanical Engineering, Duke University, May 1975
M.S./Mechanical Engineering, Duke University, September 1971
B.Tech./Mechanical Engineering, First Division with Distinction, Indian Institute of Technology, Kanpur, May 1970

Professional Experience

Graduate Assistant	Department of Mechanical Engineering and Materials Science, Duke University, 1970-1974
Research Associate	Department of Mechanical Engineering and Materials Science, Duke University, January 1975-July 1975
Design Engineer	T.C. Cooke, P.E., Inc., Consulting Engineers, Durham, NC, October 1974-February 1977
Director	Section of Energy Management and Special Projects, T.C. Cooke, P.E., Inc., Durham, February 1977-December 1978
Senior Project Engineer and Systems Analyst	Center for the Study of Energy Conservation, Duke University, November 1975-1984
Adjunct Associate Professor	Department of Mechanical Engineering and Materials Science, Duke University, July 1978-1984
President	Sud Associates, P.A., Consulting Engineers, Durham, NC, January 1979-Present

Professional Society Affiliations
American Society of Heating, Refrigeration, and Air Conditioning Engineers
American Society of Mechanical Engineers
Association of Demand Side Management Professionals
Sigma Xi
National Society of Professional Engineers/Professional Engineers of North Carolina

Professional License

Registered Professional Engineer: North Carolina, South Carolina, Tennessee, Ohio, and Virginia

Professional Activity

Member, ASHRAE PC 100.5, Energy Conservation Standards for Existing Institutional Buildings (1976-1982).

Chairman, Energy Conservation Committee, ASHRAE, Triangle Chapter, NC (1978-79).

ASHRAE Technical Committee 4.7 - Energy Calculations (Member 1978-83, Secretary 1981-83).

Member, TC 4.7 Subcommittees on Handbook and Simplified Energy Calculations.

ASHRAE Technical Committee 4.6: Building Operations Dynamics (Member 1985-present).

ASHRAE TC 9.6: Systems Energy Utilization (Chair 1998-2000; Member 1987-present).

Member, Technical Advisory Committee, ASHRAE SP 56: Development of a Guide for Analyzing and Reporting Building Characteristics and Energy Use in Commercial Buildings.

ASHRAE 669 - RP: Evaluation of Proposed ASHRAE Energy Audit Forms and Procedures.

Voting Member, ASHRAE GPC-14: Measurement of Energy and Demand Savings.

Consulting Experience

- Founded Sud Associates, P.A. in 1979.
- Conducted a variety of applied research projects on building and process energy use.
- Primary designer for major multi-disciplinary projects (architectural, electrical, mechanical, fire protection, and plumbing).
- Design of building HVAC systems for new and renovated buildings and central boiler/chiller plants.

- Performed and supervised energy audits on over 1,800 state, commercial, industrial and institutimal buildings.
- Design and installation supervision of energy conservation measures, including energy monitoring control system, envelope, HVAC, and lighting.
- Use of emergency generators and other control of loads to reduce utility system peaks.
- Sample projects are attached.

Publications
Papers:

Energy Study of Underground Rapid Transit, (with J.B. Chaddock), High Speed Ground Transportation Journal, Vol. 6, No. 3, Fall 1972, pp. 391-407.

Drag Calculations for Vehicles in Tubes from Turbulent Flow Theory, (with J.B. Chaddock), presented at the Symposium on Aerodynamics of Transportation, 1979 Conference in Buffalo, New York, pp.165-176.

Performing Reliable Energy Audits, HVAC III Conference, Purdue University, West Lafayette, Indiana, October 23-25, 1978, pp. 183-187.

Drag Calculations for Vehicles in Very Long Tubes from Turbulent Flow Theory (with J.B. Chaddock), Transactions of the ASME, Journal of Fluids Engineering, Vol. 103, June 1981, pp. 361-366.

Modeling of Building Energy Usage by a Comprehensive Modified Bin Method. Proceedings of the 1981 IEEE International Conference on Cybernetics and Society, Atlanta, Ga., Oct. 26-28, 1981, pp. 584-591.

The Proposed TC 4.7 Simplified Analysis Procedure, (with T. Kusuda), Technical Paper presented at the 1982 Annual Meeting, Toronto, June 1982, ASHRAE Transactions, 1982, Vol. 88, Part 2.

Development of a Simplified Graphical Procedure for Estimating the Energy Usage by Non-Residential Building (with R.W. Wiggins, Jr.), Technical Paper presented at the 1983 Annual Meeting, Toronto, June 1983, ASHRAE Transactions, 1983, Vol. 90, Part 2.

Development of a Simulation Technique for Evaluating Control Strategies for Minimum Energy Usage, Presented at the Workshop on HVAC Controls Modeling and Simulation, Georgia Institute of Technology, Atlanta, GA, Feb. 2-3, 1984, paper no. 3.

Control Strategies for Minimum Energy Usage, Technical Paper presented at the 1984 Annual Meeting Kansas City, MO, ASHRAE Transaction, 1984, Volume 90, Part 2.

Comparative Performance of Desiccant and Conventional Cooling Systems in Supermarkets, Electric Dehumidification: State of the Art Humidity Control for Supermarkets (interim report), Electric Power Research Institute, October 10, 1990, New Orleans, LA.

Comparative Performance of Desiccant and Conventional Cooling Systems in Supermarkets, accepted for presentation at ASHRAE Winter Meeting, January 1993, Chicago, IL.

Evaluation of Proposed ASHRAE Energy Audit Form and Procedures, (with J. Hay), Technical Paper presented at 1997 Annual Meeting June 1997, Boston, ASHRAE Transactions, 1997, Vol. 103, Part 2.

Seminars:

The Proposed Duke Model for Simplified Building Energy Calculations, Paper presented at the Seminar on Small Computer Energy Calculation Program, ASHRAE Semiannual Meeting, Philadelphia, PA, Jan. 28-Feb. 1, 1979.

Experiences on the Use of Proposed Procedures for Simplified Energy Analysis, Paper presented at the Seminar on Proposed Procedure for Simplified Energy Analysis, ASHRAE Annual Meeting, Detroit, MI, June 1979.

Overview of Retrofit Isolation Approach, Seminar on GPC 14P: Measurement of Energy and Demand Savings, ASHRAE Annual Meeting, Seattle, WA, June 20, 1999.

Major Research Reports:

Development of the Duke University Building Energy Analysis Method(DUBEAM) and Generation of Plots for North Carolina, (with Wiggins, Chaddock, and Butler), Report submitted to North Carolina Energy Institute, November 1979, NTIS-NCEI 0009.

Development of the Prudent 90-75R Retrofit and Evaluation of Standard Designs of Selected Commercial Buildings for the Development of Energy Performance Standards for New Buildings, (with J.B. Chaddock), Report submitted to the American Institute of Architects Research Corporation and U.S. Department of Energy, March 1980.

Comparison of Proposed ASHRAE TC 4.7 and DOE-2 Results to Examine the Feasibility of Utilizing TC 4.7 for Implementation of BEPS for Residential Buildings, August 1980, Report submitted to Center for Building Technology, National Bureau of Standards.

A Simplified Procedure for Sizing and Analyzing Thermal Energy Storage in Commercial and Institutional Buildings, and Generation of Plots for North Carolina, (with W.F. Milburn and R.L. Aicher), Reports submitted to North Carolina Energy Institute, June 1981, NTIS-NCEI0040.

Development and Validation of a Computer Model for Electric Water Heaters, (with R.L. Aicher), Report Submitted to Carolina Light and Power Company, September 1982.

Control Strategies for Minimum Energy Usage, Report submitted to ASHRAE at Conclusion of RP-253, May 1984.

Humidity Control Strategies in a Library. Report submitted to Electric Power Research Institute, December 1997, EPRI TR-106601.

Evaluation of Proposed ASHRAE Energy Audit Form and Procedures. Submitted to ASHRAE at Conclusion of Research Project 669, February 1996.

Lectures, Short Courses, Symposia Organization, Miscellaneous:

Energy Management—The Total Picture, (with T.H. Phillips), North Carolina Independent Telephone Association, Inc., Twenty First Annual Spring Conference, Greensboro, NC, May 25, 1978.

Short Course on Energy Conservation in Buildings, Duke University Continuing Education, May 1977, 1978, and 1979 (with other lecturers).

Simplified Energy Calculation, lecture delivered at the USNC/CWC 67 Energy Conservation Workshop, National Bureau of Standards, Gaithersburg, October 20-21, 1980.

Simplified Building Energy Analysis Calculation Techniques, ACEC 1981 Institute on Energy and Engineering Education, Pennsylvania State University, February 26-March 1, 1981.

Use of Computerized Energy Analysis for New and Existing Buildings, North Carolina State University, Division of Continuing Education, April 28-29, 1982.

Symposium Chairman, Simulation Predictions Compared with Measured Data, ASHRAE Annual Meeting, Kansas City, MO, June 1984.

Member, Select Panel on Research Goals and Priorities in Thermal Systems, Organized by ASME for the National Science Foundation, Fort Lauderdale, FL, April 25-27, 1984.

Seminar Lecturer, Simplified Energy Calculations, Professional Development Seminar taught by ASHRAE, Halifax, Nova Scotia, April 17-18, 1985.

Associate Editor, Workshop to Determine Research Needs in Building Controls, Organized by Drexel University for the National Science Foundation, Philadelphia, PA, March 3-4, 1986.

Comparison of [illegible]E-2 Generated Residential Energy Budgets with Those Calculated by Degree Day and Bin Methods (with Kusuda and Alereza), ASHRAE Transactions, Vol. 87, Part 1, pp. 491-499.

Waste Heat Recovery and Energy Cost Management for Food Processing Plants, NC Energy Division, One-Day workshops were held in Raleigh and Statesville, NC, June 1989.

Heating, Ventilating, and Air Conditioning SystemEfficiency: A Guide to Controlling Costs, NC Alternative Energy Corporation, a series of four one-day workshops presented to Nonprofit Groups, November 1988 to June 1989.

Symposium Chairman, Use of Building Dynamics to Optimize HVAC System Sizing and Operation, ASHRAE Winter Meeting January 1990.

State of the Art Audits, Energy 2000 Conference, Pittsburgh, PA, August 2000.

Relevant Research Activities

- **Thermal Energy Storage for Commercial and Institutional Buildings in North Carolina**, Co-sponsored by NC Energy Institute, Duke Power Company, and Carolina Power and Light Company, 1979-1980, (Co-principal Investigator).
- **Comparison of DOE-2 and ASHRAE TC 4.7 Procedure for Residential Buildings**, Sponsor—National Bureau of Standards, 1980.
- **Development and Validation of Computer Models of Electric Water Heaters**, Sponsor—Carolina Power and Light Company, 1981-1982.
- **Control Strategies for Minimum Energy Usage**, Sponsor—ASHRAE, 1980-1983, Assessment of Commercial Load Management Opportunities Using Energy Management Systems, NC Alternative Energy Corporation, 1986-1987.

- **Development of a Guide for Analyzing and Reporting Building Characteristics and Energy Use in Buildings**: ASHRAE SP 56, 1990.
- **Cooperative Agreements with City-Owned Electric Utilities to Reduce their PeakLoads** by Using Emergency Generators Owned by Carolina Telephone & Telegraph Company, 1988-ongoing.
- **Economic and Engineering Feasibility of Installing Utility Funded Emergency Generators** at Davidson Water, Inc. to Reduce Peak Billing Loads Experienced by EMC Serving the Plant.
- **Waste Heat Recovery in Restaurants: Design Optimization and Field Verification**. Research sponsored by DOE, October 1990 - March 1992.
- **Comparative Performance of Desiccant Cooling: Supermarkets**. Research sponsored by NC Energy Division, completion June 1991.
- **Variable Airflow Devices For Lumber Dry Kiln Fans: An Engineering Validation** Research sponsored by NC Alternative Energy Corporation, completion September 1992.
- **Humidity Control in Library: Evaluation of Heat Pipe Sytems, System Optimization, and Other Techniques for Humidity Control**. Research sponsored by Electric Power Research Institute, completion September 1994.
- **Evaluation of Proposed ASHRAE Energy Audit Form and Procedures**. ASHRAE Research Project 669, completion February 1996.

Community Service

Outstanding and Significant Service, Volunteer Services, State of North Carolina, Department of Human Resources

Biographical Listings

Who's Who in the South and Southwest
American Men and Women of Science
Who's Who in the Frontiers of Science and Technology
Who's Who in the World
Who's Who of Emerging Leaders in America

Supreme Court, U.S.
FILED
MAR 27 2006
OFFICE OF THE CLERK

No. 05-866

In the Supreme Court of the United States

PHILADELPHIA HOUSING AUTHORITY, ET AL.,
Petitioners,

v.

JACKIE MCDOWELL, ET AL.,
Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Third Circuit

BRIEF IN OPPOSITION

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March 27, 2006

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Question Presented for Review

Did the Court of Appeals correctly construe the Consent Decree to require that PHA compensate the tenants for its admitted violation of the Decree, with the compensation calculated upon the increased gas rates and the consumption factor that were in effect at that time, without permitting PHA to offset for revised estimates of tenant gas consumption?

List of Parties

Respondents incorporate by reference petitioner's List of Parties, except that pursuant to Fed.R.Civ.P. 25(d) the individual defendants John White and Barry Miller have been replaced by the individuals who presently hold the public offices they once held.

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Dorsey v. Housing Authority of Baltimore City,
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Federal Trade Commission v. Kuykendall,
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International Union, United Mine Workers of America v. Bagwell,
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Memphis Community School District v. Stachura,
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United States v. United Mine Workers of America,
330 U.S. 258, 67 S.Ct. 677 (1947) 5

Statutes

Federal Trade Commission Act, 15 U.S.C. §45 6
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Opinions Below

Respondents incorporate by reference petitioner's "Opinions and Orders of the Courts Below", with the following addition. The District Court order from which respondents timely appealed was dated May 6, 2004. This order denied respondents' timely motion under Fed.R.Civ.P. 59(e) to alter or amend the judgment.[1]

Statement of the Case

The Court of Appeals clearly and accurately stated the case in section (I) of its opinion (*see:* PHA appendix, pp. 2a-5a), which respondents ("Tenants") incorporate by reference herein. Tenants add that the Third Circuit, on October 17, 2005, denied PHA's petition for rehearing.

The Statement of the Case presented by petitioner ("PHA") is marred by several misleading or inaccurate assertions. First, PHA mis-characterizes its violation of the Consent Decree as being nothing more than a "procedural" misstep. PHA brief, p. 3. The Court of Appeals correctly noted that for 23 of the 25 months preceding January 1, 2003, PHA unlawfully failed to adjust the utility allowances it provided to the Tenants to reflect gas-rate increases of more

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[1] The May 6, 2004 order stated further: "¶2. This Court has made no ruling on the issue of counsel fees. Plaintiffs may submit an application for such fees, within 20 days, and defendants may respond, following which the Court will rule on that issue."

than 11%. *See:* PHA appendix, p. 4a.[2] PHA's violation of the Decree was substantive, not merely procedural.

Second, PHA misleads this Court when it suggests that the District Court found certain "facts" about the Tenants' gas consumption which the Court did not find. Contrary to PHA's assertions, the District Court never found that the Tenants "benefited from" PHA's violation of the decree (PHA brief, p. 3, p. 7)[3]. At most, the District Court held that the Tenants failed to prove that they suffered any actual injury as a result of PHA's violation of the Consent Decree. *See:* Order dated March 9, 2004, at ¶6; PHA's appendix p. 14a. However, the District Court based that holding upon its legal conclusion that the Tenants failed to challenge certain calculations of PHA's expert. The Tenants vigorously disputed the District Court's legal conclusion (and PHA's factual assertions) because the District Court's procedures failed to afford them a fair opportunity to challenge PHA's factual assertions, and improperly placed upon the Tenants the burden of *dis*proving PHA's assertions. The Tenants challenged the District Court's legal conclusion and

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[2] For much of the period from December 2000 through December 2002, the gas rate faced by the Tenants was greater by much more than 11%. The "McDowell baseline rate", reflected in the Consent Decree, was $0.87717 per ccf; in December 2000, the gas rate was $0.96575; then from January 1, 2001 until October 1, 2001 the gas rate was $1.28115, which is 46% higher than the McDowell baseline rate. PHA did not dispute these figures. *See:* PHA brief filed in District Court on Feb. 3, 2003, at p. 6.

[3] PHA's assertion that its own past consumption estimates "grossly exceeded reasonable consumption" (PHA brief, p. 6) have no factual support in the record whatsoever. Not even PHA's own expert applied that characterization.

procedures in the Court of Appeals, which found it unnecessary to reach the issue. *See:* Court of Appeals opinion, PHA appendix, p. 12a.

Third, PHA's assertion that it "was in full compliance with the Consent Decree as of January 1, 2003" is, at best, half-true. PHA brief, p. 6. PHA correctly raised the utility allowances *prospectively* effective January 1, 2003. However, as the Court of Appeals noted, PHA remained in violation of the Decree after that date because it failed to raise the allowances *retroactively* for the period Dec. 1, 2000 through Dec. 31, 2002. Court of Appeals opinion, PHA appendix p. 4a-5a.

PHA asserts without justification that the Court of Appeals' decision "interferes with HUD's regulations and imposes duties on public housing agencies different than those HUD chose to impose in its regulations." PHA brief, p. 3. For the reasons explained below, *infra* pp. 9-10, the Court of Appeals' decision does nothing of the sort. The Court of Appeals correctly construed the Consent Decree to be consistent with HUD's regulations. The Court of Appeals' decision requires no more and no less of PHA than that it compensate the Tenants fully for PHA's willful failure to follow the Decree and HUD's regulations.

Reasons for Denying the Petition

As the Court of Appeals aptly put it "[t]his case requires us to construe a consent decree." PHA's petition should be denied, first and foremost, because the Court of Appeals construed the Decree correctly. Second, the petition should be denied because the Consent Decree is unique and therefore, even if the Court of Appeals had misconstrued the Decree, that would have no significant effect on other housing authorities, much less on other litigants who have entered into other consent decrees.

Because the Consent Decree in this case is unique, it comes as no surprise that the Court of Appeals' decision creates no *bona fide* circuit split. Each and every case cited by PHA is either consistent with the decision of the Court of Appeals, or is readily distinguishable. Far from interfering with HUD's regulations, as PHA suggests it does, the Court of Appeals' decision construes the Consent Decree in harmony with HUD's regulations. Accordingly, the authority of the federal government is not undermined by the decision.

Finally, one can safely expect that the facts here are extremely unusual. It was PHA's failure to follow HUD regulations (by raising utility allowances to reflect higher rates) that prompted the Tenants' lawsuit which resulted in the 1998 Consent Decree. Less than three years after entering into the Decree, PHA again violated HUD's regulations in the same way, now also violating the Decree. After PHA ignored repeated warning letters from their counsel, the Tenants moved to enforce the Decree. PHA admitted it had again violated the Decree; its only defense was to dispute the Tenants' entitlement to compensation. PHA's theory was that it had violated the Decree in not one but two ways which, by happenstance, supposedly canceled each other out. Even if

that were true (which the Tenants disputed), it would be most extraordinary and unlikely to reoccur. Therefore, this case almost certainly will have no significant effect beyond PHA and the Tenants.

A. The Third Circuit's decision does not conflict with any decision of the Supreme Court, nor of any other circuit court:

The Court of Appeals correctly held that on account of PHA's violation of the Decree, the Tenants are entitled to compensation for the *actual harm* they suffered by reason of PHA's violation – no more and no less. The Court of Appeals construed the Decree (and HUD's regulations) to provide that:

> [T]he consent decree permitted the PHA to revise estimates of tenant consumption prospectively only. When PGW [the local gas supplier] raised its rates, the tenants were entitled under paragraph 8 of the decree to have their allowances recalculated based on the increased rates and the consumption factor in effect at that time. The difference between the allowances so calculated and the allowances the tenants received is the loss the tenants suffered . . . . This is the tenants' actual provable injury.

See: PHA's appendix pp. 11a-12a.

The Court of Appeals' decision is entirely consistent with this Court's precedents, including *inter alia*: *International Union, United Mine Workers of America v. Bagwell*, 512 U.S. 821, 114 S.Ct. 2552 (1994) and *United States v. United Mine Workers of America*, 330 U.S. 258, 67 S.Ct. 677 (1947). The Court of Appeals limited the sanction for PHA's contempt to

U.S. Housing Act, 42 U.S.C. §§1437 *et seq.*, as well as HUD's regulations thereunder, which protect the Tenants from housing-cost burdens that Congress has found excessive.

Regarding the calculation of damages for a systemic violation of the consent decree in *Kuykendall*, the Tenth Circuit concluded that the consumers were entitled to actual damages based, initially, on the seller's gross receipts – probably the broadest possible measure. *Id.* at p. 765-766. The only adjustments the Tenth Circuit allowed were two: if the sellers proved that they had provided any consumer with a *full refund*, or that any consumer was *wholly satisfied* with her purchase, then the District Court should reduce the gross receipts accordingly for each such consumer. The Tenth Circuit rejected the sellers' argument that they be allowed to offset the value of the product each consumer was sold. *Id.* at p. 766-767. PHA's analogy to the *Kuykendall* decision is at best tenuous, it is arguably counter-productive (from PHA's standpoint), and in any event the decision of the Third Circuit hardly creates a split between it and the Tenth Circuit[5].

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[5] The issue in *Kuykendall* decision is more analogous to the question which arose in this case of whether PHA, in calculating retroactive utility allowances, may retroactively lower utility *rates* (as distinguished from consumption estimates). From July 1999 through Nov. 2000, the gas rates were lower by slightly more than 10% than the *McDowell* baseline rates, and during that time PHA did not lower the allowances to reflect the lower rates. The District Court indicated that PHA, in calculating any retroactive allowance adjustments, could offset the excess from that period of lower rates, against the shortfall from the subsequent period of much higher rates. *See:* Order dated March 9, 2004, ¶4, PHA's appendix p. 14a. The Tenants did not challenge this offset, because retroactive adjustments for rate changes are permitted by